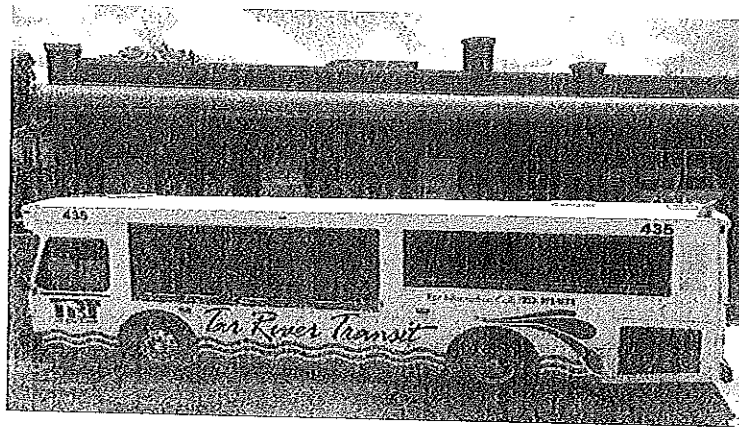


## **INVITATION FOR BIDS**

**CRM #76164  
Cooperative Bus Procurement**

**30, 35, and 40 LONG X 102 INCH WIDE  
HEAVY DUTY LOW FLOOR BUSES**

**BIDS DUE BY 2:00 P.M. ON THURSDAY, JANUARY 21, 2016**



### **Submit to:**

Tia Lawrence, Senior Purchasing Technician  
City of Rocky Mount  
331 S. Franklin Street, 4<sup>th</sup> Floor  
Rocky Mount, NC 27802  
Phone: 252-972-1226  
[Tiawana.Lawrence@rockymountnc.gov](mailto:Tiawana.Lawrence@rockymountnc.gov)

ONE GOVERNMENT PLAZA  
POST OFFICE BOX 1180



ROCKY MOUNT  
NORTH CAROLINA 27802-1180

## CITY OF ROCKY MOUNT

Dear Sir:

Please acknowledge receipt of this bid. Please indicate your intention and return this acknowledgment to the Purchasing Division by fax to 252-972-1662.

**YES:** I will bid \_\_\_\_\_  
**NO:** I will not bid \_\_\_\_\_

CITY OF ROCKY MOUNT  
P O BOX 1180  
ROCKY MOUNT, NC 27802  
DELTON L. FARMER  
PURCHASING MANAGER

**BID NO.: CRM 76164 – Cooperative Bus Procurement** \_\_\_\_\_

COMPANY: \_\_\_\_\_

STREET ADDRESS: \_\_\_\_\_

CITY STATE ZIP \_\_\_\_\_

SIGNATURE \_\_\_\_\_

TELEPHONE ( ) \_\_\_\_\_

FAX NO.: \_\_\_\_\_

INTERNET ADDRESS: \_\_\_\_\_

## Cooperative Bus Procurement

### NOTICE TO BIDDERS The City of Rocky Mount North Carolina

The City of Rocky Mount, the City of Gastonia, the City of Asheville and the City of Boone are requesting bid proposals for the manufacture and delivery of low floor transit buses per the following bid specification requirements. The City of Rocky Mount is acting as the lead procuring agency for receiving the bids for this Invitation for Bids. The procuring agencies intend to purchase 30, 35 and 40 foot long x 102 Inch wide, heavy duty, low floor diesel powered transit buses and equipment options over the course of a five (5) year contract period.

Bidders are to provide one (1) original bid price proposal in a sealed envelope with a Compact Disc (CD) containing all of the bid documents in portable document (pdf) format to the City of Rocky Mount Purchasing Office at 331 South Franklin Street, Rocky Mount NC 27802 by 2:00pm on Thursday, January 21, 2016. Hand deliveries of the bid may be made to: Purchasing Office located on the 4<sup>TH</sup> floor of the Frederick E. Turnage Administrative Complex located at 331 South Franklin Street. Requests for clarifications and approved equals shall be delivered by the required date to the same address. Companies must submit their bid price proposals in hard copy format with the required bonds.

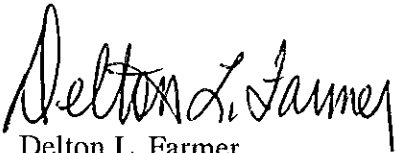
Instructions for submitting bids and complete specifications for the work, equipment, supplies or services desired may be obtained at the office of the City Purchasing Manager in the Frederick E. Turnage Administrative Complex Building during regular office hours of 8:30 A.M. - 5:00 P.M., Monday through Friday, and can be accessed and reviewed online at <http://www.rockymountnc.gov/purchasing.html>. The Purchasing office contact person for submitting bids is Tia Lawrence, Senior Purchasing Technician at 252-972-1226 or [Tiawana.Lawrence@rockymountnc.gov](mailto:Tiawana.Lawrence@rockymountnc.gov). Contact Todd Gardner, Transit Manager at 252-972-1569 or [Todd.Gardner@rockymountnc.gov](mailto:Todd.Gardner@rockymountnc.gov) for project information.

Bid award by the City of Rocky Mount is expected to occur within 45 days after bid is released. Thereafter, each Procuring Agency will issue individual purchase orders for the specific buses desired by each agency.

The City of Rocky Mount reserves the right to reject any and all bids and will not discriminate against any bidder submitting a bid because of race, creed, color, national origin or handicap. The City of Rocky Mount does reserve the right to waive any and all informalities as well as, the right to reject any or all proposals.

The City of Rocky Mount reserves the right to accept or reject any and all offers, to waive minor technicalities and informalities and to make an award deemed in its best interest. Issuance of this Invitation for Bids does not commit the agencies to any award or contract, to pay any costs incurred in preparation of a bid or to procure or contract for related services or supplies.

**CITY OF ROCKY MOUNT**



Delton L. Farmer  
Purchasing Manager

**BID SCHEDULE**

BID RELEASE DATE	Monday, November 16, 2015
CLARIFICATION / APPROVED EQUAL DUE DATE	Monday, December 7, 2015
CLARIFICATION / APPROVED EQUAL RESPONSE DATE	Friday, December 18, 2015
BID DUE DATE	Thursday, January 21, 2016

## Contents

SUPPLIER CONTACT FORM.....	8
PRICING SCHEDULE.....	9
OFFER & AWARD .....	11
CERTIFICATION REGARDING DEBARMENT & SUSPENSION.....	12
E-VERIFY AFFIDAVIT FORM.....	13
INSTRUCTIONS FOR BID BIDDERS.....	14
CONDITION OF AWARD.....	15
PERIOD OF PERFORMANCE AND QUANTITIES .....	18
AWARD PROCEDURE.....	18
PRICE ADJUSTMENTS.....	18
PERFORMANCE BOND .....	18
ASSIGNABILITY.....	18
DELIVERY DATE AND DELIVERY SCHEDULE.....	18
ASSUMPTION OF RISK OF LOSS.....	18
ACCEPTANCE OF BUS .....	19
REPAIRS AFTER NONACCEPTANCE .....	19
REPAIRS BY CONTRACTOR .....	19
REPAIRS BY PROCURING AGENCY .....	19
CONTRACTOR SUPPLIED PARTS .....	19
RETURN OF DEFECTIVE COMPONENTS .....	19
REIMBURSEMENT FOR LABOR.....	19
DELAYS .....	19
TITLE .....	20
PAYMENT .....	20
SERVICE REPRESENTATIVES.....	20
DOCUMENTS .....	20
PARTS AVAILABILITY GUARANTY.....	21
INSURANCE .....	21
PRODUCTION OF DOCUMENTS.....	21
INDEMNIFICATION .....	21
MATERIALS / ACCESSORIES RESPONSIBILITY .....	22
INSPECTION STATIONS .....	22
RESIDENT INSPECTORS.....	22
PRE-PRODUCTION MEETINGS.....	22
AUTHORITY.....	23
SUPPORT PROVISIONS.....	23
COMPLIANCE WITH SAFETY REQUIREMENTS .....	23
ACCEPTANCE TESTS .....	23
PRE-DELIVERY TESTS .....	23
VISUAL AND MEASURED INSPECTIONS .....	24
TOTAL BUS OPERATION .....	24
BUY AMERICA AUDIT.....	24
VEHICLE INSPECTIONS.....	24
ROAD TEST INSPECTION.....	24
INTERIOR INSPECTION .....	25
EXTERIOR INSPECTION.....	25
ELECTRICAL INSPECTION .....	25
WHEELCHAIR RAMP INSPECTION.....	25
AUDITS .....	25
COMMUNICATIONS.....	26
DOCUMENTATION.....	26

VEHICLE RELEASE FOR DELIVERY.....	26
POST-DELIVERY AND FINAL ACCEPTANCE.....	26
CERTIFICATE OF ACCEPTANCE.....	26
TECHNICAL SPECIFICATIONS.....	27
SCOPE AND PURPOSE.....	27
APPROVED EQUAL PROCESS.....	27
INSIDE NOISE ABATEMENT.....	27
OUTSIDE NOISE ABATEMENT.....	27
OVERALL DIMENSIONS.....	28
ENGINE (DIESEL).....	28
ENGINE (DIESEL HYBRID OPTION).....	29
ENGINE (CNG OPTION).....	29
EXHAUST SYSTEM.....	29
COOLING SYSTEM.....	29
TRANSMISSION.....	29
HYBRID DRIVE.....	30
DRIVE SHAFT.....	30
FRONT AXLE.....	30
REAR AXLE.....	30
HUBS, WHEELS AND TIRES.....	30
BRAKES.....	31
SUSPENSION.....	31
STEERING.....	32
HYDRAULIC SYSTEM.....	32
FUEL SYSTEM (DIESEL).....	32
FUEL TANK (DIESEL).....	32
FUEL TANK (CNG).....	33
FUEL FILTERS (DIESEL).....	34
FUEL FILL (DIESEL).....	34
REAR RUN BOX AND CONTROLS.....	34
AIR SYSTEM.....	35
FRAME.....	35
BODY AND UNDER FRAMING.....	35
ROOF AND CEILING.....	36
WHEELHOUSES.....	36
FENDERS AND SPLASHGUARDS.....	36
BUMPERS.....	37
SUBFLOOR.....	37
FLOOR COVERINGS.....	37
WHEELCHAIR RAMP.....	37
HVAC SYSTEMS.....	38
FRONT DOOR.....	38
REAR DOOR.....	39
ACCESSIBILITY (COMPARTMENTS, PANELS, DOORS).....	39
STANCHIONS AND GRAB RAILS.....	40
MODESTY PANELS.....	40
DRIVER'S SEAT.....	40
PASSENGER SEATING.....	40
WHEELCHAIR ACCOMMODATION.....	40
WHEELCHAIR SECURING SYSTEM.....	41
DRIVERS CONTROLS.....	41
WINDOWS, SASH, WINDSHIELD, WIPERS AND WASHER.....	42
MIRRORS.....	43
BICYCLE RACKS.....	43
ELECTRICAL SYSTEMS.....	43

BATTERY AND BATTERY STORAGE .....	43
CHARGING SYSTEM .....	43
HYBRID ELECTRIC CHARGING SYSTEM.....	43
HYBRID ELECTRIC ENERGY STORAGE .....	44
HYBRID HIGH VOLTAGE DEVICES .....	44
ELECTRICAL COMPONENTS .....	44
MULTIPLEXING .....	44
LIGHTING.....	45
DESIGNATION SIGNS .....	46
VIDEO SURVEILLANCE SYSTEM.....	47
PUBLIC ANNOUNCEMENT SYSTEM.....	47
INTELLIGENT TRANSPORTATION SYSTEM (ITS) .....	47
MOBILE RADIO SYSTEM.....	47
FARE COLLECTION.....	47
FIRE SUPPRESSION SYSTEM .....	47
SAFETY EQUIPMENT .....	48
PAINT AND GRAPHICS .....	48
WARRANTIES.....	48
OFFERER VEHICLE TECHNICAL INFORMATION.....	50
FEDERAL AND STATE REQUIREMENTS .....	60
PRE AWARD AND POST DELIVERY AUDIT REQUIREMENTS .....	72
ATTACHMENT A.....	73
ATTACHMENT B.....	74
ATTACHMENT C .....	75
ATTACHMENT D .....	76
ATTACHMENT E.....	77
ATTACHMENT F.....	78

## SUPPLIER CONTACT FORM

Company Information	
Company Name	
Address	
City, State, Zip Code	
Company Phone	
Company Fax	
Description of Products Sold	
Does your company utilize fulfillment partners/channel partners (dealers, distributors, resellers, etc.)? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Customer Service Phone Number	
Federal Tax ID Number	
Ariba Network ID (if applicable)	
Dun & Bradstreet Number	
Website URL (if applicable)	
Business Contact – Person who understands NC relationships and who can serve as a project manager	
First and Last Name	
Job Title	
Phone Number	
Fax Number	
E-Mail Address	
Address (if different from above)	
Technical Contact – (If different from above) – Person within your organization who can assist with the creation of an electronic product catalog for your contract line items	
First and Last Name	
Job Title	
Phone Number	
Fax Number	
E-Mail Address	
Address (if different from above)	



## BID PRICING SCHEDULE

### PRICING SCHEDULE

ITEM	HEAVY DUTY BUS DESCRIPTION – BASE BIDS	UNIT PRICE
1	30' X 102" HEAVY DUTY LOW FLOOR DIESEL	\$
2	35' X 102" HEAVY DUTY LOW FLOOR DIESEL	\$
3	40' X 102" HEAVY DUTY LOW FLOOR DIESEL	\$
4	COMBINED PRICE 30', 35', AND 40' LOW FLOOR DIESEL BUS - TOTAL COST	\$

ITEM	OPTIONAL EQUIPMENT DESCRIPTION	UNIT PRICE
1	CNG (CUMMINS ISL-G W/ (8) 85" TYPE III FUEL TANKS)	\$
2	CNG (CUMMINS ISL-G W/ (4) 85" & (4) 120" TYPE III FUEL TANKS)	\$
3	ALLISON HYBRID DRIVE	\$
4	BAE STYLING PACKAGE	\$
5	ALLISON B-400R TRANSMISSION	\$
6	FOUR WHEEL DISC BRAKES	\$
7	AMSECO METROPOLITAN PASSENGER SEATS	\$
8	FIXED FRAMED PASSENGER WINDOWS	\$
9	SPORTSWORKS DL2 BLACK POWDER COATED BIKE RACK	\$
10	DEDUCTION FOR REAR DESTINATION SIGN	(\$ )
11	SEON CAMERA SYSTEM PER SPEC	\$
12	UTA CAMERA SYSTEM PER SPEC	\$
13	APOLLO CAMERA SYSTEM PER SPEC	\$
14	CLEVER DEVICES DR 700 PER SPEC	\$
15	AVAIL ITF SYSTEM PER CUSTOMER SPEC	(\$ )
16	DEDUCTION FOR ALL PAINTED STEEL WHEELS	(\$ )
17	AUTOMATIC PASSENGER COUNTER SYSTEM UTA MODEL 30 APC CPU ( W/LAN+GPS)	\$
18	NEXT BUS AUTOMATED VEHICLE HARDWARE	\$
19	PASSENGER SIGNAL TOUCH TAPE THRU OUT BUS	\$
20	DELCO DN 50 ALTERNATOR	\$
21	ELECTRIC ASSISTED POWER STEERING	\$
22	SPORTSWORKS APEX 3 BIKE RACK – INCLUDING DEDUCTION FOR SPECIFIED RACK	\$

23	DEDUCTION FOR CUSTOMER SUPPLIED TIRES	(\$ )
24	SYSTEM LOGO AND "WELCOME ABOARD" ON RAMP	\$
25	POSI-LOC FUEL NOZZEL	\$
26	METAL FLAKE PAINT – EXTERIOR	\$
27	BRT HYBRID DRIVE SYSTEM	\$
28	WHITE OR SILVER SEIES FRONT AND SIDE DESINATION SIGNS	\$

DELIVERY TIME:

The delivery of each order will be negotiated at time of order placement.

THE BIDDER OR OFFEROR, , CERTIFIES OR AFFIRMS THE  
TRUTHFULNESS AND ACCURACY OF THE BID PRICES STATED ABOVE.

Signature of the Bidder or Offeror's Authorized Official  
Name and Title of the Bidder or Offeror's Authorized Official  
Date

## OFFER AND AWARD

By execution below, the Offeror hereby offers to furnish equipment and services as including General Provisions, Quality Assurance Provisions, Warranty Provisions, Technical Specifications and Federal Requirements therein.

Offeror: \_\_\_\_\_  
Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
Signature of Authorized Signer

\_\_\_\_\_  
Title

\_\_\_\_\_  
Phone

## AWARD

By execution below the Procuring Agency accepts Offer as indicated above.

\_\_\_\_\_  
Contracting Officer:

\_\_\_\_\_  
Signature:

\_\_\_\_\_  
Date of Award:



## **City of Rocky Mount Certification Regarding Debarment and Suspension**

Contracts for construction or services shall comply with the provisions of 43 CFR Part 12, Subpart C (Uniform Administrative Requirements for Grants and Cooperative Agreements with State and Local Governments). In order to comply with this provision, no contract may be awarded by the grantee (City of Rocky Mount), a subgrantee or contractor of any grantee or subgrantee to any party that has been debarred or suspended under Executive Order 12549. By signing this document, you certify to the best of your knowledge that the company, its principals, and its subcontractors which may be awarded a contract with the City of Rocky Mount:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission or embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statement, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally charged by a governmental entity (Federal, State, or local) with commission of any of the offenses in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

**BY** \_\_\_\_\_  
(Signature of Owner or Authorized Representative)

**DATE** \_\_\_\_\_

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Name/Location of Project)

STATE OF NORTH CAROLINA

AFFIDAVIT

COUNTY OF \_\_\_\_\_

\*\*\*\*\*

I, \_\_\_\_\_ (the individual attesting below), being duly authorized by and on behalf of \_\_\_\_\_ (the entity bidding on project hereinafter "Employer") after first being duly sworn hereby swears or affirms as follows:

1. Employer understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hires employees pursuant to federal law in accordance with NCGS 64-25(5).

2. Employer understands that Employers Must Use E-Verify. Each employer, after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCSG 64-25(a).

3. Employer is a person, business entity, or other organization that transacts business in this State and that employs 25 or more employees in this State. (Mark Yes or No)

a. YES \_\_\_\_\_, or

b. NO \_\_\_\_\_

4. Employer's subcontractors comply with E-Verify, and if Employer is the winning bidder on this project Employer will ensure compliance with E-Verify by any subcontractors subsequently hired by Employer.

This \_\_\_\_\_ day of \_\_\_\_\_, 2015.

Signature of Affiant  
Print or Type Name: \_\_\_\_\_

State of \_\_\_\_\_, County of \_\_\_\_\_

Signed and sworn to (or affirmed) before me, this the \_\_\_\_\_

day of \_\_\_\_\_, 2015

My Commission Expires:

Notary Public

(Affix Official/Notarial Seal)

## INSTRUCTIONS TO BIDDERS

1. Samples of items, when required that do not have prior approval, must be furnished free of expense, prior to the opening of bids, and if not destroyed, will upon request, be returned at the bidder's expense. Request for the return of samples must be made 10 days following opening of bids. Each individual sample must be labeled with bidder's name and item number.
2. Price should be stated in units of quantity requested on price proposal sheet(s) with packing included.
3. If the items bid upon have a trade name or brand, such trade name or brand must be stated in the bid.
4. Attach complete specifications for any substitution offered, or when amplification is desirable or necessary.
5. If descriptive matter is attached to bid, bidder's name must be on all sheets pertaining to proposal or bids.
6. Where a brand or trade name appears in the specification, it is understood that it refers to that material or its equivalent.
7. Please address and mail your bid as shown below:

**CITY OF ROCKY MOUNT  
PURCHASING DEPARTMENT  
P.O. DRAWER 1180  
ROCKY MOUNT, NC 27802**

8. **MARK YOUR BID IN THE LOWER LEFT HAND CORNER OF ENVELOPE AS PER THE FOLLOWING SAMPLE:**

<b>BID REQUEST NO.: (PUT CRM #) SEALED BIDS ON: (PUT TITLE OF BID) TO BE OPENED: (PUT DATE, TIME &amp; DAY OF WEEK)</b>
---

If forwarded other than by mail delivery, bids must be delivered/addressed directly to City of Rocky Mount, Purchasing Department, 331 South Franklin Street, or Purchasing Conference Room, 4th floor, Municipal Office Building, Rocky Mount, NC 27803

**\*ALL BIDDERS ARE TO READ AND SIGN THE CITY OF ROCKY MOUNT  
CONDITIONS FOR BID AWARD AND RETURN IT WITH THEIR BID PRICE  
PROPOSAL. FAILURE TO DO SO MAY RENDER YOU BID AS NON-RESPONSIVE.**

**CITY OF ROCKY MOUNT  
CONDITIONS FOR BID AWARD**

1. All bids and proposals shall be for furnishing apparatus, supplies, materials, equipment and/or work and services in accordance with the applicable plans and specifications prescribed by the City of Rocky Mount from the date shown until date of opening the proposals, the plans and specifications of the proposed work and/or complete description of the apparatus, supplies, materials, or equipment and/or work and services are and will continue to be on file in the office of the Purchasing Manager of the City of Rocky Mount, N.C. during usual office hours 8:30 A.M. to 5:00 P.M., and available to prospective bidders.
2. No proposal will be considered or accepted unless, at the time of its filing the same shall be accompanied by Cash or a Certified deposit check on some bank or trust company insured by the Federal Deposit Insurance Corporation, in an amount of not less than the five percent (5%) of the total proposal. In lieu of making the cash deposit as above provided, such bidder may file a bond executed by a corporate surety licensed under the laws of North Carolina to execute such bonds, all bid bonds and deposits being further conditioned under Section 2, G.S. 143-129 H.B. 634.
3. The City reserves the right to evaluate all bids especially where there is a wide range in specifications or to reject any and all bids and proposals, and further specifically reserves the right to make the award or and/or awards in the best interest of the City of Rocky Mount.
4. The bidder and/or bidders to whom contract is awarded must comply fully with the requirements of General Statutes, Section 143-129 as amended, including entering into contract and/or Purchase Order and the furnishing of a satisfactory surety bond in the full amount of the contract price to guarantee faithful performance of the contract.
5. Time, in connection with discount offered, will be computed from date of delivery of the supplies or materials on delivery at destination when final inspection and acceptance are at those points or from date correct invoice is received if latter is later than the date of delivery. Guaranteed maximum price must be shown in all bids.
6. In case of default of the contractor and/or suppliers, the City may procure the articles, or services from other sources and hold the contractor and/or suppliers responsible for any excess cost occasioned thereby.
7. Payment by City due thirty days after delivery in Rocky Mount and inspection unless otherwise specifically provided: subject to any discounts allowed.
8. By mutual consent, between the City of Rocky Mount and the successful bidder and/or bidders, the base contract may be subsequently extended up to 100 percent (100%) of the dollar value.

9. Positively No Bids considered unless submitted on the proposals furnished by the City of Rocky Mount.
10. All tax imposed upon any article on which you are bidding, shall be shown as a separate item and in no case included with price bid.. Failure to comply with these conditions will be considered grounds for rejection.
11. This proposal shall be irrevocable after the public opening and cannot be withdrawn after the time and said deposit shall be forfeited to the City of Rocky Mount as liquidated damages if this bid is withdrawn after the public opening, or if the undersigned bidder fails to execute formal contract and provide satisfactory surety within ten (10) days after the award. If this bid is not accepted within thirty (30) days after the public opening, it shall be deemed rejected and deposit shall be returned to the undersigned bidder.
12. It is specifically agreed as part of the consideration of the signing of this contract that the parties herein, their agent, officials, employees, or servants will not discriminate in any manner on the basis of race, color, creed, national origin, handicapped status, age, religion or sex with reference to the subject matter of this contract no matter how remote. The parties hereto further agree in all respects to conform with provisions and intent of the City of Rocky Mount, North Carolina.

This provisions being incorporated for the benefit of the City of Rocky Mount and its residents may be enforced as set out in said ordinances, enforcement of these provisions shall be by action for specific performance, injunctive relief, or other remedy as by law provided: and this provision shall be construed in such manner as to prevent and eradicate all discrimination based on race, color, creed, national origin, handicapped status, age, religion or sex.

This provision shall be binding on the successors and assigns of the parties hereto with reference to the subject matter of this contract.

13. The City reserves the right to award all or any part to one or more bidders.
14. (5%) deposit Enclosed \$\_\_\_\_\_ see paragraph 2.
15. It is understood that the items in this proposal shall be purchased as stated on price proposal sheet. Where there is an estimated quantity being requested, the items will be purchased on an as needed basis.
16. The successful bidder(s) must maintain in stock at all items the items in this contract in sufficient quantities to ensure quick delivery on replacement items. The City of Rocky Mount reserves the right to inspect the facilities of each bidder before awarding the contract.
17. Contract or Purchase Order shall be for a one time purchase, or for the period of time noted in the specifications or on the purchase order.



18. The City of Rocky Mount reserves the right to cancel the contract at any given time, by giving the vendor a written notice.

In compliance with the above request for bids, and subject to all the conditions thereof, the undersigned offers and agrees, if this bid is accepted within 30 days from the date of the opening, to furnish any or all of the items upon which prices quoted, at the price set opposite each item, and unless otherwise specified, within \_\_\_\_\_ days, after receipt of order, delivery F.O.B. Rocky Mount, N.C.

Discounts will be allowed for prompt payments as follows:

10 calendar days _____ percent	15 calendar days _____ percent
20 calendar days _____ percent	30 calendar days _____ percent

Bidder: \_\_\_\_\_

Address: \_\_\_\_\_

By: \_\_\_\_\_

Telephone No. : \_\_\_\_\_

**Authorized To Sign**

Title: \_\_\_\_\_

Fax No. : \_\_\_\_\_

Date: \_\_\_\_\_

## **PERIOD OF PERFORMANCE AND QUANTITIES**

The term of this contract will be for a period of five (5) years from date of award. There is no guarantee of the total number of buses to be purchased under this contract. The quantities listed below are estimates only and may vary based on factors including but not limited to Federal, State, and local funding. There is no minimum or maximum number of each different size or configuration.

**City of Rocky Mount-15, City of Gastonia-10, City of Asheville-15 and the City of Boone-10.**  
**The Minimum number of buses to be purchased is Two (2) and a Maximum of buses is Fifty (50).**

## **AWARD PROCEDURE**

This contract will be awarded to a single proposer with the lowest responsive responsible bid based on the total cumulative price of items listed in lines 1 - 3 (Heavy Duty Bus Description) combined as listed on Page 7. The Procuring Agency reserves the right to not make an award if it's so determined to be in the agencies best interest.

## **PRICE ADJUSTMENTS**

The prices of such buses and equipment shall be the prices quoted. These prices shall remain fixed for any orders issued within the first ninety (90) days from the contract award date. The price(s) of any buses and Optional equipment ordered after the first ninety (90) day price period shall be that quoted plus any escalation which will be calculated based on the formula which utilizes the U.S. Department of Labor/Bureau of Labor Statistics Producer Price Index ("PPI") Category 1413, "Trucks and Bus Bodies".

## **PERFORMANCE BOND**

The successful bidder shall furnish a 100% performance bond executed by a corporation surety licensed under the laws of North Carolina to execute such bonds, conditioned that the surety will upon demand forthwith make the payments to the obligee upon said bond if the bidder fails to perform the duties on the contract in accordance with the contract documents. The performance bond must be furnished within thirty (30) days after award, which guarantees performance of all terms and conditions of the contract. The performance bond shall specifically cover the performance of the contract according to its terms and conditions, as well as payment of all related bills and encumbrances. This performance bond shall be issued by a surety company who is listed by the U.S. Treasury Department's list of approved sureties, as published in Circular 570, as of the bid date. The performance bond shall be issued in an amount equal to 100% of the bid amount and shall be dated concurrent to, or subsequent to, the date of the purchase order for five (5) year period.

## **ASSIGNABILITY**

Assignability of rights to others for purchases under this contract may be assigned by the Procuring Agency. Any assignee under this contract will act solely as a Procuring Agency and are subject to regulations as outlined in the FTA circular 4420.1F or as amended.

## **DELIVERY DATE AND DELIVERY SCHEDULE**

A delivery date shall be established for each order of buses completed under this contract based on the maximum delivery period quoted by the successful Offeror and the date of receipt by the Manufacturer of actual purchase orders. The buses shall be delivered at a rate not to exceed 4 buses per day. Hours of delivery shall be 8:00am through 4:00pm, Monday through Friday, unless modified in writing by the Procuring Agency to the individual agencies as requested on their purchase orders.

Delivery of buses shall be determined by signed receipt of the Procuring Agency's designated agent(s) at a designated point of delivery and may be preceded by a cursory inspection of the bus. Such agents and delivery points will be identified on individual purchase orders to be issued under this contract.

## **ASSUMPTION OF RISK OF LOSS**

The Procuring Agency shall assume risk of loss of the bus on delivery, as defined in "Bus Delivery Procedure", if delivered by common carrier or driveway, or on release to the Procuring Agency's drivers at the Contractor's plant. Prior to this delivery or release, the Contractor shall have risk of loss of the bus, including any damages sustained during the common carrier or driveway operation regardless of the status of title or any payments related to the bus. Drivers shall keep a maintenance log enroute and it shall be delivered to the Procuring Agency with the bus.

## **ACCEPTANCE OF BUS**

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Within 15 (fifteen) calendar days after arrival at the designated point of delivery, the bus shall undergo the Procuring Agency tests defined in the Quality Assurance Provisions. If the bus passes these tests or if the Procuring Agency does not notify Contractor of nonacceptance within 15 (fifteen) calendar days after delivery, acceptance of the bus by the Procuring Agency occurs on the fifteenth day after delivery. Acceptance may occur earlier if the Procuring Agency notifies the Contractor of early acceptance or places the bus in revenue service. If the bus fails these tests, it shall not be accepted until the repair procedures defined in "Repairs After Nonacceptance" have been carried out and the bus retested until it passes.

## **REPAIRS AFTER NONACCEPTANCE**

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The Contractor or its designated representative shall perform the repairs after nonacceptance. If the Contractor fails or refuses to make the repairs within 5 (five) days, then the work may be done by the Procuring Agency's personnel with reimbursement by the Contractor.

## **REPAIRS BY CONTRACTOR**

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After nonacceptance of the bus, the Contractor must begin work within 5 (five) working days after receiving notification from the Procuring Agency of failure of acceptance tests. The Procuring Agency shall make the bus available to complete repairs timely with the Contractor repair schedule.

The Contractor shall provide, at its own expense, all spare parts, tools, and space required to complete the repairs. At the Procuring Agency's option, the Contractor may be required to remove the bus from the Procuring Agency's property while repairs are being affected. If the bus is removed from the Procuring Agency's property, repair procedures must be diligently pursued by the Contractor's representatives, and the Contractor shall assume risk of loss while the bus is under its control.

## **REPAIRS BY PROCURING AGENCY**

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If the Procuring Agency performs the repairs after nonacceptance of the bus, it shall correct or repair the defect and any related defects using Contractor-specified parts available from its own stock or those supplied by the Contractor specifically for this repair. At a period to be mutually agreed upon, reports of all repairs covered by this procedure shall be submitted by the Procuring Agency to the Contractor for reimbursement or replacement of parts.

## **CONTRACTOR SUPPLIED PARTS**

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If the Contractor supplies parts for repairs being performed by the Procuring Agency after nonacceptance of the bus, these parts shall be shipped prepaid to the Procuring Agency from any source selected by the Contractor within 10 (ten) working days after receipt of the request for said parts.

## **RETURN OF DEFECTIVE COMPONENTS**

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The Contractor may request that parts covered by this provision be returned to the manufacturing plant. The Contractor shall pay the total costs for this action.

## **REIMBURSEMENT FOR LABOR**

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The Procuring Agency shall be reimbursed by the Contractor for labor. The amount shall be determined by multiplying the number of man-hours actually required to correct the defect by a per hour, 5M mechanic, straight wage rate, including fringe benefits, of \$40 per hour, plus the cost of towing in the bus if such action was necessary.

## **DELAYS**

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If the delivery of the vehicles or equipment under this contract should be unavoidably delayed, the Procuring Agency shall extend the time for completion and delivery of such vehicles by a specific number of days for the excusable delay. A delay is unavoidable only if the delay relates to a natural disaster, war, or strikes and was substantially and in fact the cause for the Contractor to miss the established delivery dates.

The Contractor shall notify the Procuring Agency as soon as the Contractor has knowledge that an event has occurred that will cause a delay in deliveries. The Contractor must follow-up such notice within five (5) days with a written confirmation and explanation as to the cause of the delay.

The Contractor shall supply, as soon as such data are available, any reasonable proofs that are required by the Procuring Agency to make a decision on any request for extension of delivery dates. The Procuring Agency shall examine the

request and related proof and determine if the Contractor is entitled to an extension and the duration of such extension. The Procuring Agency shall notify the Contractor of his decision in writing.

It is expressly understood and agreed that the Contractor shall not be entitled to damages or compensation, and shall not be reimbursed for losses on account of delays resulting from any cause under this provision.

## **TITLE**

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A Manufacturers Statement of Origin (MSO) document for registering the bus in the State of North Carolina within the counties to be designated on the purchase orders to be issued under this contract shall be provided to the Procuring Agency at the time each bus is released for delivery. Upon acceptance of each bus, the Contractor warrants that the title shall pass to the Procuring Agency free and clear of all encumbrances.

## **PAYMENT**

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The Procuring Agency shall pay and the Contractor shall accept the amounts set forth in the price schedule as full compensation for all costs and expenses of completing the work in accordance with the Contract, including but not limited to all labor and material required, overhead, expenses, storage and shipping, risks and obligations, taxes (as applicable), fees and profit, and any approved costs.

All payments shall be made as provided herein, less any additional moneys withheld as provided below.

The Procuring Agency shall make payments for buses at the unit prices itemized in the Price Schedule within 30 (thirty) calendar days after the delivery and acceptance of each bus and receipt of a proper invoice. In the event that the bus does not meet all requirements for acceptance the Procuring Agency may, at its exclusive option, "conditionally accept" the bus and place it into revenue service pending receipt of Contractor furnished materials and/or labor necessary to effectuate corrective action for acceptance. For any conditionally accepted bus the payment shall be reduced by an amount to be withheld, and paid upon corrective action by the contractor, equal to the estimated cost for parts and labor for the corrective action.

The Procuring Agency shall make a final payment for all withholding within 30 (thirty) calendar days of receipt of a final proper invoice and the following:

- Delivery and acceptance of the bus.
- Rectification of any deficiencies found during the acceptance of buses.
- Contractor provision of any certifications as required by law and/or regulations.
- Completion of post-delivery audits required under the Contract.

## **SERVICE REPRESENTATIVES**

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The Contractor shall, at its own expense, have a competent service representative(s) available on request to assist the Procuring Agency's staff in the solution of engineering or design problems within the scope of the specifications that may arise during the warranty period. This does not relieve the Contractor of responsibilities under Part 4: Warranty Provisions.

## **DOCUMENTS**

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The Contractor shall provide the Procuring Agency, within 45 days after the delivery date of final buses ordered, current maintenance and parts manuals (in written form and on compact disk (if available)) in the quantities of one per bus with a minimum of three copies and a maximum of five copies for each separate purchase order for buses placed under this agreement. Additionally, standard operator's manual(s) shall be provided in the quantities one per bus with a minimum of three copies for each separate purchase order for buses under this Contract. The Contractor shall keep maintenance manuals available for a period of three years after the date of acceptance of the buses procured under this Contract. The Contractor shall also exert its best efforts to keep maintenance manuals, operator manuals, and keep parts books up-to-date for a period of 15 (fifteen) years. The supplied maintenance and operator's manuals shall incorporate all equipment ordered on the buses covered by this procurement.

In addition, if not included in the parts manual, the Contractor shall also provide a complete list of all major components and sub-components provided by subcontractors used on the buses including the original suppliers' and/or manufacturers' part name, part numbers, company names, addresses, telephone numbers and contact persons' names.

## **PARTS AVAILABILITY GUARANTY**

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The Contractor hereby guarantees to make available, within reasonable periods of time, the spare parts, software and all equipment necessary to maintain and repair the buses supplied under this Contract for a period of at least 15 (fifteen) years after the date of acceptance. Parts shall be interchangeable with the original equipment and be manufactured in accordance with the quality assurance provisions of this Contract. Prices shall not exceed the Contractor's then current published catalog prices.

Where the parts ordered by the Procuring Agency are not received within two working days of the agreed upon time/date and a bus procured under this Contract is out-of-service due to the lack of said ordered parts, then the Contractor shall provide the Procuring Agency, within eight hours of the Procuring Agency's verbal or written request, the original suppliers' and/or manufacturers' parts numbers, company names, addresses, telephone numbers and contact persons' names for all of the specific parts not received by the Procuring Agency.

Where the Contractor fails to honor this parts guaranty or parts ordered by the Procuring Agency are not received within 45 (forty-five) days of the agreed upon delivery date, then the Contractor shall provide to Procuring Agency, within 7 (seven) days of the Procuring Agency's verbal or written request, the design and manufacturing documentation for those parts manufactured by the Contractor and the original suppliers' and/or manufacturers' parts numbers, company names, addresses, telephone numbers and contact persons' names for all of the specific parts not received by the Procuring Agency. Contractor's design and manufacturing documentation provided to the Procuring Agency shall be for its sole use in regard to the buses procured under this Contract and for no other purpose.

## **INSURANCE**

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During the term of the contract, the contractor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the contract. As a minimum, the contractor shall provide and maintain the following coverage and limits:

The contractor shall provide and maintain Worker's Compensation Insurance, as required by the laws of North Carolina, as well as employer's liability coverage with minimum limits of \$150,000.00, covering all of contractor's employees who are engaged in any work under the contract. If any work is sublet, the contractor shall require the subcontractor to provide the same coverage for any of his employees engaged in any work under the contract.

Commercial General Liability - General Liability Coverage on a Comprehensive Broad Form on an occurrence basis in the minimum amount of \$500,000.00 Combined Single Limit. (Defense cost shall be in excess of the limit of liability.)

Automobile - Automobile Liability Insurance, to include liability coverage, covering all owned, hired and non-owned vehicles, used in connection with the contract. The minimum combined single limit shall be \$150,000.00 bodily injury and property damage; \$150,000.00 uninsured/under insured motorist; and \$1,000.00 medical payment.

Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The contractor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina law s or this contract. The limits of coverage under each insurance policy maintained by the contractor shall not be interpreted as limiting the contractor's liability and obligations under the contract.

## **PRODUCTION OF DOCUMENTS**

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Upon award of the Contract to an Offeror, such Offeror shall commence performance under the Contract by executing all Contract Guaranty Agreements provided with the Offer, by furnishing copies of the certificates of insurance required to be procured by the Contractor pursuant to the Contract documents within 30 calendar days after the date of receipt of the notice of award or within such further time as the Procuring Agency may allow. Failure to fulfill these requirements within the specified time is cause for termination of the Contract under "Termination for Default."

## **INDEMNIFICATION**

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The Contractor shall, to the extent permitted by law (1) protect, indemnify and save the Procuring Agency and its officers, employees and agents, including consultants, harmless from and against any and all liabilities, damages, claims, demands, liens, encumbrances, judgments, awards, losses, costs, expenses, and suits or actions or proceedings, including reasonable expenses, costs and attorneys' fees incurred by the Procuring Agency and its officers, employees and agents, including consultants, in the defense, settlement or satisfaction thereof, for any injury, death, loss or damage to persons or property of any kind whatsoever, arising out of, or resulting from, the negligent acts, errors or omissions of the Contractor, including negligent acts, errors or omissions of its officers, employees, servants, agents, subcontractors

and suppliers; and (2) upon receipt of notice and if given authority, shall settle at its own expense or undertake at its own expense the defense of any such suit, action or proceeding, including appeals, against the Procuring Agency and its officers, employees and agents, including consultants, relating to such injury, death, loss or damage. Each party shall promptly notify the other in writing of the notice or assertion of any claim, demand, lien, encumbrance, judgment, award, suit, action or other proceeding hereunder. The Contractor shall have sole charge and direction of the defense of such suit, action or proceeding. The Procuring Agency shall not make any admission, which might be materially prejudicial to the Contractor unless the Contractor has failed to take over the conduct of any negotiations or defense within a reasonable time after receipt of the notice and authority above provided. The Procuring Agency shall at the request of the Contractor furnish to the Contractor all reasonable assistance that may be necessary for the purpose of defending such suit, action or proceeding, and shall be repaid all reasonable costs incurred in doing so. The Procuring Agency shall have the right to be represented therein by advisory counsel of its own selection at its own expense.

The obligations of the Contractor under the above paragraph shall not extend to circumstances where the injury, or death, or damages is caused solely by the negligent acts, errors or omissions of the Procuring Agency, its officers, employees, agents or consultants, including negligence in (1) the preparation of the Contract documents, or (2) the giving of directions or instructions with respect to the requirements of the Contract by written order. The obligations of the Contractor shall not extend to circumstances where the injury, or death, or damages is caused, in whole or in part, by the negligence of any third party operator, not including an assignee or subcontractor of the Contractor, subject to the right of contribution as provided in the next sentence below. In case of joint or concurrent negligence of the parties hereto giving rise to a claim or loss against either one or both, each shall have full rights of contribution from the other.

## **MATERIALS / ACCESSORIES RESPONSIBILITY**

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The Contractor shall be responsible for all materials and workmanship in the construction of the bus. This provision excludes any equipment supplied by the Procuring Agency, except insofar as such equipment is damaged by the failure of a part or component for which the Contractor is responsible, or except insofar as the damage to such equipment is caused by the Contractor during the manufacture of the buses. Risk of damage to or loss of the buses is the subject of "Assumption of Risk of Loss" provision.

## **INSPECTION STATIONS**

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Inspection stations shall be at the best locations to provide for the Work content and characteristics to be inspected. Stations shall provide the facilities and equipment to inspect structural, electrical, hydraulic and other components and assemblies for compliance with the design requirements.

Stations shall also be at the best locations to inspect or test characteristics before they are concealed by subsequent fabrication or assembly operations. These locations shall minimally include underbody structure completion, body framing completion, body prior to paint preparation, water test, engine installation completion, underbody dress-up and completion, bus prior to final paint touchup, bus prior to road test and bus final road test completion.

## **RESIDENT INSPECTORS**

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The Procuring Agency shall be represented at the Contractor's plant by resident inspectors, as required by FTA. Resident inspectors may be Procuring Agency employees or outside contractors. The Procuring Agency shall provide the identity of each inspector and shall also identify their level of authority in writing. They shall monitor, in the Contractor's plant, the manufacture of transit buses built under the procurement. The presence of these resident inspectors in the plant shall not relieve the Contractor of its responsibility to meet all of the requirements of this procurement. The Procuring Agency shall designate a primary resident inspector, whose duties and responsibilities are delineated in "Pre-Production Meetings," "Authority" and "Pre-Delivery Tests," below. Contractor and resident inspector relations shall be governed by the guidelines included as Attachment A to this "Section 8: Quality Assurance."

## **PRE-PRODUCTION MEETINGS**

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The primary resident inspector may participate in design review and pre-production meetings with the Procuring Agency. At these meetings, the configuration of the buses and the manufacturing processes shall be finalized, and all Contract documentation provided to the inspector.

No less than thirty (30) days prior to the beginning of bus manufacture, the primary resident inspector may meet with the Contractor's quality assurance manager and may conduct a pre-production audit meeting. They shall review the inspection procedures and finalize inspection checklists. The resident inspectors may begin monitoring bus construction activities two weeks prior to the start of bus fabrication.

## **AUTHORITY**

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Records and data maintained by the quality assurance organization shall be available for review by the resident inspectors. Inspection and test records for this procurement shall be available for a minimum of one year after inspections and tests are completed.

The Contractor's gauges and other measuring and testing devices shall be made available for use by the resident inspectors to verify that the buses conform to all specification requirements. If necessary, the Contractor's personnel shall be made available to operate the devices and to verify their condition and accuracy.

Discrepancies noted by the resident inspector during assembly shall be entered by the Contractor's inspection personnel on a record that accompanies the major component, subassembly, assembly or bus from start of assembly through final inspection. Actions shall be taken to correct discrepancies or deficiencies in the manufacturing processes, procedures or other conditions that cause articles to be in nonconformity with the requirements of the Contract specifications. The inspection personnel shall verify the corrective actions and mark the discrepancy record. If discrepancies cannot be corrected by replacing the nonconforming materials, the Procuring Agency shall approve the modification, repair or method of correction to the extent that the Contract specifications are affected.

The primary resident inspector shall remain in the Contractor's plant for the duration of bus assembly Work under this Contract. Only the primary resident inspector or designee shall be authorized to release the buses for delivery. The resident inspectors shall be authorized to approve the pre-delivery acceptance tests. Upon request to the quality assurance supervisors, the resident inspectors shall have access to the Contractor's quality assurance files related to this procurement. These files shall include drawings, assembly procedures, material standards, parts lists, inspection processing and reports, and records of Defects.

## **SUPPORT PROVISIONS**

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The Contractor shall provide office space for the resident inspectors in close proximity to the final assembly area. This office space shall be equipped with desks, outside and interplant telephones, Internet access, file cabinet and chairs.

## **COMPLIANCE WITH SAFETY REQUIREMENTS**

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At the time of the Pre-Production meeting, the Contractor shall provide all safety and other operational restrictions that govern the Contractor's facilities. These issues will be discussed and the parties will agree which rules/restrictions will govern the Procuring Agency's inspector(s) and any other Procuring Agency representatives during the course of the Contract.

## **ACCEPTANCE TESTS**

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Fully documented tests shall be conducted on each production bus following manufacture to determine its acceptance to the Procuring Agency. These acceptance tests shall include pre-delivery inspections and testing by the Contractor and inspections and testing by the Procuring Agency after the buses have been delivered.

## **PRE-DELIVERY TESTS**

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The Contractor shall conduct acceptance tests at its plant on each bus following completion of manufacture and before delivery to the Procuring Agency. These pre-delivery tests shall include visual and measured inspections, as well as testing the total bus operation. The tests shall be conducted and documented in accordance with written test plans approved by the Procuring Agency.

Additional tests may be conducted at the Contractor's discretion to ensure that the completed buses have attained the required quality and have met the requirements of the Technical Specifications.

The pre-delivery tests shall be scheduled and conducted with thirty (30) days notice so that they may be witnessed by the resident inspectors, who may accept or reject the results of the tests. The results of pre-delivery tests, and any other tests, shall be filed with the assembly inspection records for each bus. The under floor equipment shall be available for inspection by the resident inspectors, using a pit or bus hoist provided by the Contractor. A hoist, scaffold or elevated platform shall be provided by the Contractor to easily and safely inspect bus roofs. Delivery of each bus shall require written authorization of the primary resident inspector. Authorization forms for the release of each bus for delivery shall be provided by the Contractor. An executed copy of the authorization shall accompany the delivery of each bus.

## **VISUAL AND MEASURED INSPECTIONS**

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Visual and measured inspections shall be conducted with the bus in a static condition. The purpose of the inspection testing includes verification of overall dimension and weight requirements, that required components are included and are ready for operation, and that components and subsystems designed to operate with the bus in a static condition do function as designed.

## **TOTAL BUS OPERATION**

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Total bus operation shall be evaluated during road tests. The purpose of the road tests is to observe and verify the operation of the bus as a system and to verify the functional operation of the subsystems that can be operated only while the bus is in motion.

Each bus shall be driven for a minimum of fifteen (15) miles during the road tests. If requested, computerized diagnostic printouts showing the performance of each bus shall be produced and provided to the Procuring Agency. Observed Defects shall be recorded on the test forms. The bus shall be retested when Defects are corrected and adjustments are made. This process shall continue until Defects or required adjustments are no longer detected.

Prototype/pilot vehicle acceptance

In order to assess the contractor's compliance with the Technical Specifications (if Pilot Vehicle is required), the Procuring Agency and the contractor shall, at the pre-production meeting, jointly develop a Configuration and Performance Review document for review of the pilot vehicle. This document shall become part of the official record of the pre-production meeting.

## **BUY AMERICA AUDIT**

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A post-delivery Buy America audit is required for federally funded bus procurements (see 49 CFR Part 663 for additional information). The onsite resident inspectors are to monitor the production processes to verify compliance with final assembly requirements identified by the Buy America pre-award audit. This audit is to verify compliance with final assembly requirements and final documentation of Buy America compliance and must be completed prior to title transfer.

Note: If there is not a pilot/prototype bus, then the Buy America post-delivery audit should be performed following completion of the first serial production bus. In addition to monitoring of the production processes, the Procuring Agency must verify compliance that more than 60 percent of the costs of all components are produced in the United States. Finally, the Procuring Agency must execute the required certificates.

## **VEHICLE INSPECTIONS**

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Each bus is subjected to a series of inspections after the bus reaches the point of final completion on the assembly line. Typically, the vehicle manufacturer performs its own quality assurance inspections following assembly line completion before releasing each bus to the resident inspectors. The inspections for each vehicle are documented, signed off upon passing and included in the vehicle record.

These are the typical inspections performed on each bus by the resident inspectors:

Water test inspection

Road test inspection

Interior inspection (including functionality)

Hoist/undercarriage inspection

Exterior inspection (including roof)

Electrical inspection

Wheelchair ramp/lift inspection

Water test inspection

The water test inspection checks the integrity of the vehicle's body seams, window frame seals and other exterior component close-outs for their ability to keep rainwater, road splash, melting snow and slush, and other exterior water from entering the inside of the vehicle. The vehicle's interior is inspected for signs of moisture and water leaks. To perform the leak inspection, interior ceiling and side panels are removed, and access doors are opened. If any moisture or water is detected, then the source of the leak will be located and repaired by the manufacturer, and the vehicle will be tested again.

## **ROAD TEST INSPECTION**

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The road test inspection checks all the vehicle's systems and sub-systems while the vehicle is in operation. Typically, the road test inspection is performed immediately following the water test inspection to reveal any standing water that may be present due to a leak, but was not noticed during the "static" water test. Objectionable vibrations, air leakage and other factors that affect ride quality are recorded and reported to the vehicle manufacturer for resolution. Vehicle stability,



performance, braking and interlock systems, HVAC, and other critical areas are checked to ensure that the vehicle is complete and ready to provide safe and reliable service.

The following tests may be performed and recorded during the road test:

- Acceleration test
- Top speed test
- Gradability test
- Service brake test
- Parking brake test
- Turning effort test
- Turning radius test
- Shift quality

## **INTERIOR INSPECTION**

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The interior inspection checks the fit and finish of the interior installations.

In addition, the inspection also verifies the installation and function of systems and subsystems according to the Build Specification. All systems and functions accessed from the interior are inspected for functionality, appearance and safety.

Examples of systems/functions inspected include the following:

- Interior and exterior lighting controls
- Front and rear door systems
- Flooring installation
- Passenger and operator's seat systems
- Wheelchair securement and ramp systems
- Fire suppression system
- Electrical installations (multiplex, tell-tale wiring, panels, etc.)
- Window systems and emergency escape portals
- Operator dash/side panel controls/indicators
- Hoist/undercarriage inspection

The hoist/undercarriage inspection checks the installation of components, wiring, air lines, presence of fluid leaks, etc., located under the vehicle. Typically, this inspection is performed following the road test. The vehicle is lifted onto a hoist or pulled over a pit for the inspection. Areas inspected are the front suspension, air bags, air line routings, electrical connections and routings, drive-train components, linkages, and any other system or component that may be prone to early failure due to inadequate installation techniques. All lines, cables, hoses, etc., are inspected for proper securement and protection to prevent rubbing, chafing or any other condition that could result in a failure. The engine/powerplant and HVAC compartments are also inspected during this time.

## **EXTERIOR INSPECTION**

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The exterior inspection checks the fit and finish of components installed on the exterior of the vehicle. Access panels are opened and accessories are inspected for proper installation. In addition, vehicle paint, graphics and proper decals are also inspected. Acceptable paint finish quality (orange peel, adhesion, etc.) should be agreed on with the vehicle manufacturer prior to production to ensure consistency of inspections.

## **ELECTRICAL INSPECTION**

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The vehicle's main electrical panels and other sub-panels are inspected for proper components, to include relays, fuses, modules, terminal strips, decals, etc. In addition, electrical harnesses are inspected for proper wiring and termination techniques, bulkhead protection, looming and other items that could result in future electrical failure. Onboard vehicle compartment schematics are verified for accuracy.

## **WHEELCHAIR RAMP INSPECTION**

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The wheelchair ramp assembly is inspected for proper installation and performance. Clearances critical to the operation of the ramp are verified, and the ramp's electrical systems are inspected to ensure appropriate wire routings and protection. The successful integration of the ramp assembly into the vehicle is verified, and the vehicle interlocks are checked during automatic and manual ramp operation.

## **AUDITS**

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During serial production of the bus's quality assurance inspection, tests may be performed to ensure that the manufacturer's quality standards are being followed. These inspection audits could be on items such as torque wrench

calibrations, proper techniques for fastener installations, proper use and type of adhesives, use of correct installation drawings on the production line, etc.

## **COMMUNICATIONS**

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The lines of communications, formal and informal, should be discussed and outlined in the pre-production meeting. As previously discussed, resident inspectors should represent the Procuring Agency for all bus-build related issues (quality, conformance, etc.). Resident inspectors can relay communications addressing contractual type issues but should do so only under the consult of the Procuring Agency's contracts administrator. Actual personnel contacts for the manufacturing facility should be established during resident inspector orientation. These contacts could include quality assurance, production, material handling, engineering, and buy-off area personnel.

## **DOCUMENTATION**

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The following documents/reports are typically generated during the bus build process:

- Vehicle Build Specification
- Sales Order
- Pre-production meeting notes
- Vehicle Acceptance Inspections
- Water Test Inspection Report
- Road Test Inspection Report
- Interior Inspection Report
- Hoist/Undercarriage Inspection Report
- Exterior Inspection Report
- Electrical Inspection Report

## **VEHICLE RELEASE FOR DELIVERY**

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Upon satisfactory completion of all inspection, audit and test criteria, and resolution of any outstanding issues affecting the purchase of any or all buses, proper documentation (the Release for Delivery) is signed by the designated resident inspector authorizing the bus manufacturer to deliver the vehicle to the Procuring Agency's facility, where it will undergo a post-delivery inspection process and final acceptance. The satisfactory sign-off of the Release for Delivery should complete the resident inspector's duties for each bus. In final preparation for delivery, the bus manufacturer may request the resident inspector to do a final walk-through of the bus after it has been cleaned and prepped for shipping.

## **POST-DELIVERY AND FINAL ACCEPTANCE**

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The Procuring Agency shall conduct acceptance tests on each delivered bus. These tests shall be completed within 15 days after bus delivery and shall be conducted in accordance with the Procuring Agency's written test plans. The purpose of these tests is to identify defects that have become apparent between the time of bus release and delivery to the Procuring Agency. The post-delivery tests shall include visual inspection, along with a verification of system(s) functionality and overall bus operations. No post-delivery test shall apply new criteria that are different from criteria applied in a pre-delivery test.

Buses that fail to pass the post-delivery tests are subject to non-acceptance. The Procuring Agency shall record details of all defects on the appropriate test forms and shall notify the contractor of acceptance or non-acceptance of each bus within five days after completion of the tests. The defects detected during these tests shall be repaired according to procedures defined in the contract after non-acceptance.

## **CERTIFICATE OF ACCEPTANCE**

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In the event that the bus does not meet all requirements for acceptance, The Procuring Agency must identify reasons for non-acceptance and work with the OEM to develop a timeline of addressing the problem for a satisfactory resolution.

Conditional acceptance: In the event that the bus does not meet all requirements for acceptance, the Procuring Agency may conditionally accept the bus and place it into revenue service pending receipt of contractor furnished materials and/or labor necessary to address the identified issue(s). For any conditionally accepted bus the payment shall be reduced by an amount to be withheld, and paid upon corrective action by the contractor, equal to the estimated cost for parts and labor for the corrective action.

## TECHNICAL SPECIFICATIONS

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### 30', 35' AND 40' x 102" LOW FLOOR DIESEL AND DIESEL HYBRID AND CNG FUEL OPTION

#### SCOPE AND PURPOSE

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Procuring Agency seeks to purchase heavy duty transit buses available that will provide maximum passenger comfort, and safety, combined with excellence in reliability, operating characteristics and economy of operation. All buses shall be in compliance with the Americans with Disabilities Act (ADA) and meet Federal and FMVSS requirements as applicable. Buses shall be new, unused, current model specifically designed for transit service and manufactured in the United States in accordance with "Buy America" requirements. Heavy duty transit buses ordered under this bid will be low-floor diesel powered and will be 30, 35 and 40 feet in length by 102 inches wide, with an optional CNG and diesel hybrid fuel alternative made available for all size buses.

The manufacturer shall certify that each bus meets all Federal and State Vehicle Safety Standards and shall be designed, constructed and tested to ensure a minimum service life of at least twelve (12) years or 500,000 miles in revenue service. A copy of the Altoona test report is required with bid submission.

#### APPROVED EQUAL PROCESS

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Throughout these specifications, the various components and systems are described. Brand names are used as a description of a component or system that is known to meet the Procuring Agency's requirements. Unless otherwise specified, these named products are offered for purposes to better explain the accompanying salient physical, functional, or performance characteristics desired in the bus.

Proposers requesting clarifications or consideration of an approved equal to a specific brand named component are required to provide full descriptions including manufacturer, make or model, and other descriptive data for each specified component. All requests must be fully supported with technical data, test results, transit revenue experience, life cycle cost data and other pertinent information which demonstrates that the item and/or system being offered meets the specific requirement and is a suitable substitute as determined by the Procuring agency. Each request will be reviewed and its determination known to interested parties.

#### INSIDE NOISE ABATEMENT

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The combination of inner and outer panels and any material used between them shall provide sufficient sound insulation so that a sound source with a level of 80 dBA measured at the outside skin of the bus shall have a sound level of 65 dBA or less at any point inside the bus. These conditions shall prevail with all openings, including doors and windows, closed and with the engine and accessories switched off. The bus generated noise level experienced by a passenger at any seat location in the bus shall not exceed 83 dBA and the driver shall not experience a noise level of more than 75 dBA under the following test conditions: The bus shall be empty except for test personnel, not to exceed four (4) persons, and the test equipment. All openings shall be closed and all accessories shall be operating during the test. The bus shall accelerate at full throttle from a standstill to thirty-five (35) mph on level commercial asphalt or concrete pavement in an area free of large reflecting surfaces within fifty (50) feet of the bus path. During the test, the ambient noise level in the test area shall be at least 10 dBA lower than the bus under the test. Instrumentation and other general requirements shall conform to SAE Standard J366. If the noise contains an audible discrete frequency, a penalty of 5 dBA shall be added to the sound level measured.

#### OUTSIDE NOISE ABATEMENT

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Airborne noise generated by the bus and measured from either side shall not exceed eighty three (83) dBA under full power acceleration when operated at or below thirty-five (35) mph at curb weight and just prior to transmission up shift. The bus-generated noise at curb idle shall not exceed sixty-five (65) dBA. If the noise contains an audible discrete frequency, a penalty of five (5) dBA shall be added to the sound level measured. All noise readings shall be taken fifty (50) feet from, and perpendicular to, the centerline of the bus with all accessories operating. Instrumentation, test sides, and other general requirements shall be in accordance with SAE Standard J366. The pull way test shall be conducted with the rear bumper even with the microphone. Both interior and exterior noise abatement tests must be certificated to be compliant and a copy of the furnished with the proposal.

## OVERALL DIMENSIONS

Size:	40'	35'	30'
Length Over Bumpers:	491.36	441.5	369.7
Length Over Body:	480.39	431	359.4
Width Over Body excluding Mirrors:	102	102	102
Height Maximum:	125.19	125.19	122
Seating Capacity Maximum	40	32	28
Front Step Height Unkneeled:	15.3	15.3	15.3
Wheel Base:	279	230	162.8
Turning Radius Outside Bumper:	44.2	37.4	29.3
Approach Angle:	8.04	8.4	8.7
Departure Angle:	8.18	8.1	8.1
Break Over Angle:	13.06	14.6	14.6

## ENGINE (DIESEL)

The bus shall be powered by a Cummins ISL 280HP, or approved equal, diesel engine capable of providing the performance to satisfy the operating conditions in geographical area throughout our operating area. The engine shall have a minimum design life of 12 years or 500,000 miles, whichever comes first, and it shall be designed to require no more than one (1) major overhaul to achieve this lifetime. The engine and the transmission shall be compatible with each other in that the electronic controls of the engine shall interface with the transmission and vice versa. The engine shall meet all current Federal EPA, Clean Air Act of 1990. A copy of the engine certification shall be supplied with the proposal.

The power plant shall be removable in eight (8) hours or less by 2 Class II Mechanics, as a complete unit, including engine and transmission assembly. The engine mounting devices shall provide maximum isolation from audible frequencies and from vibrations which could be transmitted to the bus. No vibrations shall be produced or transmitted at fundamental frequencies of the bus structure or suspension, or any of the attachments to the bus.

The engine air intake shall be through a screened or louvered opening at the rear of the bus. The opening and the duct to the air cleaner shall be isolated from the primary body structure for noise attenuation. A dry type air cleaner that is easily removable and meets or exceeds the engine manufacturer's requirements for transit operations shall be used.

The engine duct shall be designed to minimize the entry of water into the air intake system. Drainage provisions shall be included to allow any water/moisture to drain prior to entry into the air filter. A highly visible sight gauge to facilitate inspection of the air cleaner element condition will be incorporated.

The engine shall be equipped with spin-on oil filter(s) of a type and capacity which exceed all engine manufacturer requirements. A Spinner II or approved equal auxiliary oil filtration system is required, but, in no case, should this or any component be incorporated that will void or impair the engine manufacturer's warranty or be detrimental to the operation of the engine.

The engine shall be equipped with a FEMCO or approved equal No-Spill system no spill oil drain type plug. Engine oil draining shall not require the plug be removed from the oil pan, rather a method by where a hose is connected to the plug which allows oil to flow out of the engine.

Engine auxiliary devices shall be flange-mounted and gear-driven directly from the engine with the exception of the alternator and A/C compressor. All auxiliary drive belts shall be guarded and protected from road debris by a hinged guard. Engine driven auxiliary devices shall be secured to the engine and/or transmission except the A/C compressor.

Sensors shall be supplied on the engine and incorporated in an engine protection system to warn the operator of low oil pressure and hot engine conditions. Engine protection circulatory shall automatically shut down the engine if adverse oil pressure and/or coolant temperature conditions exist in accordance with engine manufacturers recommendations.

The engine shall be equipped with a 24 volt DC electrical starter system. Starter shall incorporate overcrank protection. A starter switch, starter cutout switch, and engine run control switch shall be supplied in the engine compartment.

The engine shall be equipped with a Phillips-Thmro or approved equal 120volt @1000 watt block heater.

### **ENGINE (DIESEL HYBRID OPTION)**

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The engine shall be the Cummins ISL-B, or approved equal, rated at peak horsepower of 280 HP. The engine shall meet all current Federal EPA, Clean Air Act of 1990 The maximum operating speed of the engine will be governed at 55 mph. A copy of the engine certification shall be supplied with the proposal

### **ENGINE (CNG OPTION)**

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The engine shall be the Cummins ISL-G, or approved equal, fueled by compressed natural gas and rated at peak horsepower of 280 BHP @ 2,000 RPM and peak torque of 900 ft-lbs @ 1,300 RPM. The engine shall meet all current Federal EPA, Clean Air Act of 1990 The maximum operating speed of the engine will be governed at 55 mph. A copy of the engine certification shall be supplied with the proposal.

### **EXHAUST SYSTEM**

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The engine exhaust system shall be constructed so that it 1) will minimize back pressure to the engine, 2) emits the lowest levels of exhaust noise and current year emissions under all operating conditions, 3) is commensurate with the latest commercially available technology and equipment, and 4) shall not cause damage to the bus finish, or present a hazard to pedestrians. The exhaust system shall be leak free to prevent exhaust products, including heat, from entering the bus. The muffler and pipes shall be placed or mounted in such a manner that they do not restrict access to other equipment or components to the extent possible.

Emission Control devices will be included with all engines that will comply with the most recent EPA requirements at the time of vehicle delivery. An electrical switch is required for stationary regeneration if applicable. Switch shall be a guarded switch and placed in the electrical panel above the operator's head or another protected area.

The engine compartment shall be completely sealed to prevent smoke or fumes from the exhaust entering the bus interior. The engine bulkhead and exhaust duct plenum shall be insulated adequate to prevent discomfort to passengers due to heat, to minimize hazard of fire in the engine compartment, and to aid in controlling noise to meet required levels

### **COOLING SYSTEM**

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The cooling system shall be a Modine E-Fan, or approved equal, electric fan cooling system or approved equal with brushless electric fans which have built in controller cooling function is to be controlled by required from engine ECM. The fans should be capable of being manually reversed in order to keep the heat exchangers clean. System shall be sized to maintain fluids at safe, continuous operating temperatures during the most severe operations possible with the bus loaded to GVWR and with ambient temperatures up to 120 degrees Fahrenheit.

The engine shall be cooled by a water-based, pressure type, cooling system. The radiator surge tank mounted above the radiator shall be of heavy duty stainless steel with a pressure relief cap mounted on top of the tank vented into a non-pressurized coolant recovery reservoir. Coolant fill shall be added to the system through the non-pressured part of the system. The engine cooling system shall be equipped with a properly sized water filter. Shut-off valves shall allow filter replacement without coolant loss.

The radiator shall be of durable corrosion resistant construction. The radiator shall be mounted with the radiator easily accessible for cleaning. Radiator piping shall be stainless steel and brass tubing. The engine radiator will designed of sufficient size to provide cooling for the engine as required by the engine manufacturer for this application.

Necessary hoses shall be premium silicone types that are rated for cooling systems. All hoses, water and air intake, shall be secured with the Otiker or approved equal constant torque type clamp.

### **TRANSMISSION**

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The transmission shall be a Voith 864.6 multiple speed (minimum of four (4) forward speeds), automatic shift with torque converter, retarder and electronic controls. Gross input power, gross input torque and rated input speed shall be compatible with the engine. A 3M mechanic, with optional assistance, shall be able to remove and replace the transmission assembly for service in less than 8 total combined man-hours. The transmission shall be designed to operate for not less than 300,000 miles on the design operating profile without replacement or major service.

The Allison B-400R Transmission shall be provided as an option and priced separately.

## **HYBRID DRIVE**

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Buses shall have a hybrid drive unit that coordinated with the engine and the rear axle drive ratio enables the vehicle to achieve the required top speed, acceleration and hill climbing capability while still maintaining passenger comfort and providing a smooth ride. The hybrid drive shall be rated to operate the GVWR of the bus and can be in either the series or parallel configuration. The engine and hybrid drive combination shall automatically prevent lugging when climbing hills of any gradient on which the bus is designed to operate. The hybrid drive system design must provide a means to ensure that the operator has a consistent level of retardation based on pedal angle without being dependent on the level of charge of the batteries.

The electronically controlled hybrid drive shall have on-board diagnostic capabilities, be able to monitor functions, store and time stamp out-of parameter conditions in memory, and communicate faults and vital conditions to service personnel. The hybrid drive shall have built in protection software to guard against severe damage.

## **DRIVE SHAFT**

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The drive shaft shall be a Spicer 1710 or approved equal with a minimum of 4" diameter heavy-duty with needle bearing universal joints between the transmission and differential. A slip joint shall be included to compensate for vertical movement of the rear axle. Alignment between transmission and differential shall not exceed 9 degrees and must meet manufacturer's guidelines for recommended installation. The universal joints shall be equipped with two grease fittings installed 180 degrees apart on the U-joint to facilitate servicing. The drive shaft shall be guarded to prevent it from striking the floor of the bus or the ground in the event of a tube or universal joint failure.

## **FRONT AXLE**

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The front axle shall be Meritor or approved equal solid beam, non-driving with a load rating sufficient for the bus loaded to GVWR and shall be equipped with grease type front wheel bearings and seals. All friction points on the front axle shall be equipped with replaceable bushings or inserts and lubrication fittings easily accessible from a pit or hoist. No element of the axle steering system shall sustain a Class I failure when one of the tires hits a curb or strikes a severe road hazard. Inadvertent alternations of steering as a result of striking road hazards are steering failures.

## **REAR AXLE**

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A standard single reduction axle Meritor or approved equal will be used. The axle shall be of a separable carrier housing construction with a load rating sufficient for the bus loaded to GVWR.

Transfer of gear noise to the bus interior shall be minimized. The driven axle shall operate for 300,000 miles on the design operating profile without repairs. The lubricant drain plug shall be magnetic type, external hex head of a standard size. The axle shall be vented with the vent so designed as to prevent water from entering when the axle is submerged. The vent line shall be filtered to prevent entrance of foreign materials.

The bus manufacturer shall ensure the rear axle and differential assemblies installed are capable of withstanding the additional loadings and stresses imposed by the integral transmission retarder. Durability and reliability shall not be reduced because of the use of retarder.

Axle gear ratio shall ensure the bus is capable of highway speeds of up to 65 MPH for relatively long distances between stops. Buses shall be able to maintain a minimum of 7 MPH on a fifteen percent (15%) grade when loaded to GVWR.

## **HUBS, WHEELS AND TIRES**

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Buses shall be equipped with single front and dual rear wheels. Wheels shall be hub-piloted Alcoa or approved equal full polish Aluminum with a dura-bright finish and dura-flange wear protection. The wheels shall be 10-stud, ventilated disk radial tire type, with wheel loads carried by the center hub. Wheel rim width shall be 8.25 inch and the wheel disk shall have five (5) ventilated holes

Wheel bearings shall be grease lubricated (packed type) for front and rear hubs. The wheel bearing inner axle fluid seals shall run on a replaceable wiper ring/wear surface.

Tires shall be Michelin X inCity Z 305/85/22.5 on the 35' and 40' buses and 275/ 70/ 22.5 on the 30'buses approved for transit application with a load range appropriate to bus weight and size. All wheel and tire assemblies shall be balanced to assure smooth handling and optimum tire wear.

One spare wheel and tire shall be shipped with each bus.

A Stemco Digital – Data Trac Pro Hubometer shall be installed on the right rear hub with a metal guard to prevent damage to the Hubometer.

## **BRAKES**

Buses shall be equipped with an s-cam type air brake system which conforms to FMVSS requirements and all Federal and State regulations. Air brake chambers and slack adjusters shall be furnished at all wheels, actuated for service braking in a manner to assure balanced braking, and actuated for parking/emergency braking on the rear wheels. Buses shall be equipped with four (4) wheel Anti-Lock Brake system with a minimum of 3 sensors. Parking brake shall be spring applied, air released chamber mounted on the rear axle assembly. The emergency air tank shall be piped to a service valve at the left front corner of the bus to fill the tank for towing the vehicle.

Brake shoes shall be operated by cams which in return are operated by automatic slack adjusters Slack adjusters shall be equipped with grease fittings and be capable of automatic adjustments throughout the life of the lining and drum assembly. Brake lines shall be installed so that the possibility of damage is minimized. Lines and hoses shall be clamped and supported in a manner which minimizes long, unsupported hose lengths and precludes rubbing against any part of the bus

The parking and emergency brakes shall be with a 40 PSI setting, controlled by a manual valve located convenient to the driver for safe, convenient access. Valve operation shall be "pull to set brakes" and "push to release" type brake system.

This brake shall have stopping ability that is equal to or better than required by Federal and State regulations. It shall automatically apply if air system pressure falls below half the normal value or such other value as is recommended by the manufacturer. This parking/emergency brake shall be of spring brake design.

Four (4) wheel disc brakes shall be provided as an option and priced separately.

## **SUSPENSION**

Buses shall be equipped with an air bag front and rear suspension system. The air suspension system shall consist of a combination of air bellows and leveling valves by which the air pressure is automatically regulated in proportion to bus loading. The leveling valves shall also act to keep the bus body in a relatively level position, and contain a damping or compensating feature to prevent excessive consumption of air resulting from high frequency Axle movements over rough streets. The air bellows shall act as a flexible connection between the body and the axle to cushion and absorb road shocks.

The air system must be equipped with safety devices which will prevent the loss of air beyond safe operating limits in the event of failure or leaks in any or all of the suspension system components. Suitable radius rods, torque rods or track bars, shall be provided to control lateral, longitudinal and torsional movement of the body in relation to the axles. Anti-sway bars shall be provided both front and rear in order to prevent the bus from swaying when turning or moving on and out of traffic.

Shock absorbers shall be heavy-duty and compatible with the rated axle capacity. Shock absorbers shall not interfere with the steering mechanism. Leveling valve exhaust ports shall be protected to avoid fouling by road dirt. A means shall be provided to allow the front air bellows to be deflated at bus stops to "kneel" the bus, lowering the front steps as an aid to passenger entry and exit. A guarded three position spring-loaded to the off-position KNEEL switch shall be provided. Actuation of the switch when the front door is open shall cause the bellows to deflate in not less than one nor more than five seconds. Release of this switch after actuation shall stop the kneel cycle immediately, but shall not cause the bus to rise; closing the front door shall cause the bellows to be inflate.

The accelerator and rear brakes shall both be interlocked so that the bus cannot be driven when the bus is kneeling and the front door and/ or rear door is open. An emergency override switch shall be provided remotely located in the driver's compartment electrical panel to allow bus movement in the event an air bellow should break.

The bus will kneel and rise at a maximum rate of 1.5 inches per second at essentially a constant rate. After kneeling, the bus shall rise within two (2) seconds to a height permitting the bus to resume service and to rise to the correct operating height within nine (9) seconds. During the lowering and rising operation the maximum acceleration shall not exceed 0.2g and the jerk shall not exceed 0.3g/sec. measured on the front door step tread.

## **STEERING**

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Hydraulically assisted power steering gear is required. The steering column shall be a tilt/telescope column and shall be adjustable by the driver. The steering gear shall be an integral type of American manufacture with flexible lines eliminated or the number and length minimized.

Steering torque applied by the driver shall not exceed (10) foot-pounds with the front wheels straight ahead to turned 10 degrees. Steering torque may increase to seventy (70) foot-pounds when the wheels are approaching the steering stops. Steering effort shall be measured with the bus at SLW, stopped with the brakes released and the engine at normal idling speed on clean, dry, level, commercial asphalt pavement and the tires inflated to recommended pressure. Power steering failure shall not result in loss of steering control.

With the bus in operation, the steering effort shall not exceed 55 pounds at the steering wheel rim and perceived free play in the steering system shall not materially increase as a result of power assist failure. Gearing shall require no more than seven (7) turns of the steering wheel lock-to-lock.

The steering wheel shall be twenty inches (20") minimum in diameter and shall be black color plastic construction with a metal core and non-padded. It shall be provided with puller holes in the hub for easy removal.

Steering effort and number of turn's lock-to-lock shall be designed and coordinated to minimize driver fatigue. Steering forces and characteristics in the event of failure in the power boost shall be such that the bus can be safely driven in this condition.

Caster angle shall be selected to provide a tendency for the return of the front wheels to the "straight ahead" position with minimum assistance from the driver.

Gear assembly shall be mounted so as to reduce road shock and vibration. Steering mechanism shall be mounted so that all adjustments can readily be made without demounting parts. Diagnostic port shall be provided to monitor pressures.

Grease fittings shall be provided to allow proper lubrication of all steering components, and located to be accessible with a straight end on the grease gun with the vehicle on a pit or hoist.

## **HYDRAULIC SYSTEM**

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Hydraulics shall be limited to the Power Steering system. The system shall require an engine driven pump and minimum 9qt reservoir. All power steering pressure and return hoses shall be FC300. A low fluid sensor and indicator lamp on dash shall be provided.

## **FUEL SYSTEM (DIESEL)**

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Shall meet or exceed Federal D.O.T. Regulations for diesel and Bio-diesel fuel systems.

## **FUEL TANK (DIESEL)**

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The fuel tank shall be Stainless Steel construction securely mounted to the bus to prevent movement during bus maneuvers, but shall be easily removable for cleaning or replacement. The fuel tank shall have a usable capacity of not less than 120 gallons on the 35' and 40' bus and 75 gallons for the 30' bus.

The fuel tank shall be mounted in such a manner to permit the repair and replacement of the fuel pick up, return lines, cover gasket, or the fuel tank neck and gasket without the removal of the fuel tank. The fuel tank shall be equipped with an external, hex head, brass drain plug. The drain plug shall be located at the lowest point of the fuel tank.

The fuel tank shall have a removable filter to permit cleaning and inspection. The fuel tank shall be made of stainless steel with internal baffles to prevent sloshing noises regardless of the fuel level. The baffles or fuel pickup location shall assure continuous full power operation on a six (6) percent upgrade for 15 minutes starting with more than 25 gallons of fuel over the unusable amount in the tank and a six (6) percent downgrade for thirty minutes starting with no more than ten gallons of fuel over the unusable amount in the tank.

The tank shall be internally braced and externally supported in such a manner as to eliminate the possibility of developing vibration fatigue cracks. The tank shall be mounted by stainless steel saddle and straps. The straps shall be insulated from the tank with non-porous material that does not absorb moisture.



The fuel tank shall have a permanently affixed plaque stating manufacturer, certification capacity and date of manufacturer. The plaque shall be clean and legible after any undercoating process, and shall comply with E.P.A. requirements. The plaque shall be visible when the fuel fill door is open. All fuel systems on all model buses will be compatible with all blends of Bio- Diesel fuel.

## FUEL TANK (CNG)

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### Storage Tanks

The CNG tanks shall be neck mounted and located on the roof of the vehicle in a powder coated welded steel frame tank mounting cradle. Tanks shall be arranged in two rows with the front row consisting of four tanks and the rear row consisting of four tanks. Tanks shall be Type III with a seamless 6061 aluminum liner and exterior carbon composite wrapping manufactured by Structural Composite Industries or approved equal. Tanks shall be designed for a settled pressure of 3,600 psig and provide for a maximum filling pressure of 4,250 psig.

Each tank will be labeled "For CNG Only" in letters. Each tank shall be oriented on the vehicle so that the manufacturer's label with a serial number, manufacture date and "For CNG Only" tag will be visible without rotating tank to obtain that information. For compliance regulation purposes the CNG system must meet: NFTA 52, NGV2, and FMVSS304.

### CNG Accessibility

For safety purposes, the roof mounted tanks must be accessible to maintenance personnel without the requirement to walk on top of the closed tank enclosure to open the enclosure doors. A walkway through the center of the tanks shall be provided. The enclosure doors shall be secured with non-keyed twist latches and shall incorporate hand holds to assist in opening the enclosure doors once unlatched. When opened, the enclosure doors shall be secured to prevent from over-extension. The open enclosure doors shall also provide a certain degree of fall prevention. Once exposed, for safety purposes, maintenance personnel shall not have to walk on top of or over the tanks in order to inspect or service the tanks, valves, regulators or Pressure Relief Devices (PRD). Access to the roof mounted tanks shall be through the rear roof hatch.

At a minimum, each tank must have an easily accessible and operable manual shutoff valve that will isolate the tank from the shared fuel supply piping system. The option to add electric solenoid valves to each tank shall be made available. Depending on the size of the tank, two (2) or three (3) PRDs will protect each tank. The PRDs will vent independently (not manifolded together) through cutouts in the tank enclosure. The PRD vents must be able to be inspected from ground level with the use of a mirror and shall be designed so as to not collect water.

### CNG Capacity

Standard Tank configuration shall be as follows:

Eight (8) Tanks 16" diameter x 85" lengths

Capacity: 17,608 SCF  
816 lbs. of fuel  
Diesel equivalent gallons: 126

Extended Range configuration shall be as follows:

Four (4) Tanks 16" diameter x 120" length and Four (4) Tanks 16" diameter x 85" length

Capacity: 21,636 SCF  
1002 lbs. of fuel  
Diesel equivalent gallons: 155

### CNG Piping and Tubing

The entire high pressure portion of the fuel delivery system shall be constructed of stainless steel and shall be sized appropriately. There shall only be one (1) crossover fuel line on the roof with a single stainless steel fuel supply line going into the engine compartment at the rear curbside of the vehicle. This fuel supply line shall be covered with a conduit vent to trap and expel any escaped gas that may accumulate in the fueling panel. All hoses in the fuel system shall be continuously marked with manufacturer's name, CNG service and working pressure.

### CNG Hoses

Flexible hoses shall be used only in the low pressure portion of the fuel delivery system. The hose between the pressure regulator in the fuel management panel and the low pressure filter in the engine compartment shall be a minimum of 10 feet in length to provide warming of the CNG fuel after the pressure and temperature drop from the regulator. The hose from the filter to the engine shall be a maximum of 4 feet in length.

#### CNG Fittings

All high pressure stainless steel tubes use Swagelok fittings to join to each other or to components like valves. All hoses use 37° JIC flare fittings. All components have straight thread O-ring seal ports. The use of pipe threads is not acceptable.

#### CNG Filters

There shall be one high pressure and one low pressure filter supplied

The high pressure filter shall be provided in the fuel management panel in a location that provides for ease of service. A normally closed electric solenoid shall be provided downstream from the high pressure filter and prior to the high pressure regulator. The "shut-off" solenoid will stop the flow of gas when the Ignition is in the "off" position.

The Low pressure filter shall be furnished with the engine assembly and remote mounted in the curbside engine compartment on the filter outrigger.

#### CNG Fuel Management System

The vehicle shall incorporate an integrated fuel management panel located behind a hinged access door located at the rear curbside of the vehicle. The access door shall include an interlock sensor to disable the engine starter when the door is open. In the event of a failure to the sensor the engine will not start.

The fueling panel shall incorporate the main manual shut off valve; liquid filled high and low pressure gauges, a fast fill refueling connection, slow fill refueling connection and a defueling connection. All receptacles shall include a tethered dust cap. The pressure regulator, high pressure filter and a normally closed high pressure electric solenoid shall be installed behind the fuel management panel. A low fuel lamp will be provided in the driver's area. Proposers will provide pricing for a fuel level gauge as an option.

Each vehicle shall bear a label at the fueling panel that includes:

CNG Fueled Vehicle

System working pressure

Installer's name or company

Cylinder retest date

Total cylinder water volume in cubic inches

#### **FUEL FILTERS (DIESEL)**

The DAVCO 384 shall serve as the primary Fuel Filter and a spin-on fuel filter approved by the engine manufacturer shall serve as the secondary fuel filter

#### **FUEL FILL (DIESEL)**

The fuel fill shall be located behind the centerline of the bus. The filler cap shall be a flip cap to the fuel filler neck. The fuel lines forward of the engine bulkhead shall be stainless steel with FC 350 jumper lines to fuel tank All filters and lines shall be installed in such a manner as to avoid excessive heat and fire hazard (e.g., protected from exposure to temperatures above 250 degrees Fahrenheit, positioned so leaks or breaches will not permit fuel to contact exhaust parts hotter than 250 degrees Fahrenheit). Tubing and lines shall be installed so as not to rub or be rubbed by other components.

#### **REAR RUN BOX AND CONTROLS**

Provisions shall be made in the engine compartment for a control box or panel which will incorporate the following devices. All devices shall be clearly marked and easily accessible with the engine compartment door open.

Engine Compartment Light Switch

Engine Run Control and Rear Start Switch

Murphy Oil Pressure Gauge

Murphy Coolant Temperature Gauge

Electric Fan Reverse Switch

Engine /Transmission/ABS Diagnostic Gauge

VDO Engine Hour Meter

## **AIR SYSTEM**

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The air compressor and remote mounted governor shall be mounted to the engine and gear driven. The air compressor shall have a self-contained air filter for air intake or be connected to the filtered air in the engine's air induction system. Connecting lines, pipes or hoses shall be suitable for the purpose, location/operating conditions and be protected from chafing damage.

A sufficient number of reservoirs to provide safe operation of all air operated components are required. Reserve capacity shall exceed minimum industry requirement. All air tanks shall have clean out plugs and be equipped with a pet cock type drain valves to allow individual tank purging/depressurization. All drain lines will be routed to the outside of the bus to a single access panel containing the pet cock drain valves. Each valve shall be clearly marked as to which tank it controls. Safety valves and check valves will be installed to protect against over-pressurization and/or unplanned loss of pressure.

Provisions shall be made to allow application of air pressure to the bus from an external source. Air connections shall be securely mounted in a readily accessible in the engine compartment and at the front end of the bus.

All air lines, components and their installation shall comply with applicable Federal and State requirements as in effect at the time of the bus manufacturer. The bus air system shall operate all accessories and the braking system with reserve capacity. The engine driven air compressor shall be sized to charge the air system from 40 psi to the governor cutoff pressure in less than three minutes while not exceeding the engine's fast idle rated speed. Regardless of the system's air pressure, idle up to the rated engine speed shall be available to the driver with the transmission in neutral and the parking brake applied.

With the air system fully charged and the engine shut off, the reservoir capacity shall be sufficient to permit four full brake applications and maintain 80 PSI. Buses shall not leak down more than six (6) PSI as indicated on the instrument panel mounted air gauges, within 15 minutes from the point of governor cut-off. Grommets shall protect the air lines at all points where they pass through understructure components.

The air system shall be equipped with a transit application SKF HCT-2000, 24V Htd, Filtration Plus or approved equal desiccant type air dryer. The air dryer shall be mounted in compliance with the engine manufacturer's recommendations

## **FRAME**

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The sidewall structure shall be capable of withstanding impacts of 200 foot pounds of energy from a steel faced spherical missile no less than 9 inches in diameter and of a 500 pound load applied anywhere along their length by a rigid plate 1 foot in length with no visible damage to the supporting structure. A damaged portion of the supporting structure shall be replaceable without requiring removal or replacement of the entire structure.

To protect passengers seated in low floor area, the chassis structure shall be stainless steel and incorporate a substantial integrated side impact barrier. The barrier shall include steel plate, continuous between the front wheel arches and the rear suspension (except in the width of the exit door opening). The impact barrier shall be an integral welded part of the undercarriage portion of the bus structure, and shall be angled such that vehicles impacting the bus side will tend to subvert. To further increase both passenger safety and repair ability, robust welded structures are required between the angled barrier and the bus side skins. These shall be designed to dissipate collision energy.

Exterior panels and their supporting structural members shall withstand a static load of two thousand (2,000) pounds applied perpendicular to the bus by a pad no larger than five inches square. This load shall not result in deformation that prevents installation of new exterior panels to restore the original appearance of the transit bus. The transit bus, at GVWR and under static conditions, shall not exhibit deformation or deflection that impairs operation of doors, windows, or other mechanical elements. Static conditions include the vehicle at rest with any one wheel or dual set of wheels on a 6 inch curb or in a 6 inch deep hole. All structure, body, and panel-bending mode frequencies, including vertical, lateral, and torsion modes, shall be sufficiently removed from all primary excitation frequencies to minimize audible, visible, or sensible resonant vibrations during normal service. The frame shall include extended tow eyes at the rear of bus.

## **BODY AND UNDER FRAMING**

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The transit bus body and roof structure shall withstand a static load equal to 150 percent of the curb weight evenly distributed on the roof with no more than a six-inch reduction in any interior dimension. Windows shall remain in place and shall not open under such a load. The bus shall withstand a 25 - mph impact by a 4,000 pound, post - 1973, American automobile at any point, excluding doorways, along either side of the bus with no more than three inches of permanent structural deformation at seated passenger hip height. This impact shall not result in sharp edges or protrusions in the bus interior.

The body shall be of standard transit styling and design. All material, metal panels, fasteners, shall be suitably treated (and electrically grounded) in an approved manner to resist corrosion. All posts in body side and roof sections shall in general, be made of durable aluminum alloy construction, securely fastened to the under frame structure so that the entire assembly acts as one unit without any movement at the joining. The end posts shall be designed to resist shear which would result in the case of a collision. Dissimilar metals shall not be joined by conductive material or fasteners and should be independently grounded using highly conductive straps.

All exterior access panels shall be hinged to the body frame. No sheet metal screws are permitted. Rivets, if used, shall be of the flush-head type and not protrude above the panel surface. Rivet spacing shall be in accordance with the best practices of bus industry standards. Exterior panels shall be joined and sealed in a manner which precludes the entry of water at joints and fastenings. Lower exterior body panels from the mid rail down shall be designed to facilitate quick change in thirty (30) minutes or less by one maintenance person.

All exposed under framing, underside of flooring, body panels below floor level, compartments, pans, step wells and wheel housings shall be undercoated. Particular care shall be exercised to see that this material is sprayed into all corners, crevices and pockets. Under-floor devices, valves, connectors, lines, wires and similar items shall not have undercoating applied to them to facilitate easy replacement of parts when required. Undercarriage shall be designed to ensure water will not collect and remain trapped to accelerate rust or rot.

All metal hardware shall be plated or otherwise protected against corrosion and dissimilar metals shall not be used. Fasteners and trim shall be vandal-resistant (e.g. Southco or Torx Screws) and of a type that will not loosen or break under vibration. All unexposed interior metal body parts shall be primed or painted prior to assembly.

The engine bulkhead shall be designed to last the life of the vehicle without experiencing fatigue-cracking under normal operating conditions and constructed to inhibit the spread of an engine compartment fire to the bus of the interior. The largest possible access to the engine shall be provided from the rear seat to enable easy access reach and remove parts on the upper side of the engine. Such access openings shall be hinged and seal securely to prevent the entry of fumes, heat, fire, or noise to the bus interior.

## **ROOF AND CEILING**

The roof structure shall be constructed of high strength extruded aluminum and bolted to the body frame. The roof shall be covered with a single sheet fiberglass skin with a minimum thickness of 3mm and be coated with a photocatalytic coating for ease of cleaning. The entire roof and body structure shall be well insulated against be insulated with polyurethane foam-in-place thermal insulation applied 1 1/2" nominal thickness to provide the most efficient barrier against heat and cold in an operating environment which ranges from 20 degrees to 105 degrees F as well as be insulated against operating noises from outside sources. Water deflecting roof gutters shall be provided over the side windows and doors.

The riser beneath the seats across the rear of the bus shall be stainless steel of adequate thickness and construction to preclude damage by passenger's feet. The body and under framing shall be designed and constructed to accommodate the bus being lifted by a wrecker at the front or rear ends and being towed with the front or rear wheels off the ground without damage to any of the body, frame or suspension components.

Manual open and close roof-mounted escape hatches, with clearly marked external handle, shall be provided above the front and rear axle area of the bus.

## **WHEELHOUSES**

Wheel housings shall be constructed of stainless steel corrosion and fire resistant material. Wheel housings, as installed and trimmed, shall withstand impacts of a 2-inch steel ball with at least 200 foot-pounds of energy without penetration. Sufficient clearance and air circulation shall be provided around the tires, wheels, and brakes to preclude overheating when the bus is operating on the design operating profile. Interference between the tires and any portion of the bus shall not be possible in maneuvers up to the limit of tire adhesion with weights from curb weight to GVWR. Wheel housings shall be adequately reinforced where seat pedestals are installed. Front wheelhousing shall be constructed to allow maximum aisle clearance between them for passenger movement and ADA access.

## **FENDERS AND SPLASHGUARDS**

Buses shall be provided with fenders and splash aprons. Fenders shall be of molded or extruded rubber or high-density polyethylene and shall be provided at each wheelhousing. Fenders shall present a smooth appearance and be free of dents, waves and similar irregularities. The fender for the left front wheel shall, to the maximum extent possible, preclude road spray from obscuring the driver's vision in the left-hand, outside mirror. Mud flaps/splash aprons shall be installed under the body in front of the front wheels to preclude road spray and debris from being thrown on the wheelchair lift and

its components. A three piece splash apron shall be provided across the entire bus at the rear of the rear wheels, and separate splash aprons shall be provided behind the front wheels. An approved method of grounding static electricity shall be provided on each bus such as a conductive nylon grounding strap.

## **BUMPERS**

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The front bumper shall be a 3 piece energy absorbing bumper of a wraparound type. It shall be at least 8 inches high, and shall project at least 4 inches ahead of the foremost part of the bus. (Excluding the bike rack).

The rear bumper shall be a 3 section without side extensions. . It shall be at least 8 inches high, and shall project at least 4 inches behind of the rearmost part of the bus

The bumpers will provide immediate, automatic resetting after impact without any adjustments or manual operations. The bumpers shall be able to withstand impact of a 4,000 pound passenger car moving at 8 mph without damage to the stopped bus or the bus bumper. The bumper shall provide 6 mph fixed barrier impact capability, without passenger load, with no damage to the bus. Color shall be black.

The bumper shall comply with FMVSS 215. The bumper and adjacent body panels shall be designed to protect the bus while discouraging persons from standing on or hitching rides on them. Wrap around bumper extensions shall not hinder service and be free of protrusions or sharp edges. The leading edge of the extensions shall be flush with the body. The bumper shall be independent of all power systems of the bus and shall not require service or maintenance in normal operation during the service life of the bus. Bumper heights shall be selected considering S.A.E. standards to protect against automobile damage, and considering the optimal bumper height requirements of FMVSS 215.

## **SUBFLOOR**

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The sub floor shall be made of 3/4"-7 Ply GW Industries Transit Deck XP Plus with all edges sealed. The floor shall be laid so as to be free from squeaks and must be huck bolted to the chassis structure. The sub floor shall be level and of sufficient rigidity that will not bend or move up towards the plywood when bolted together. A gradual incline over the axles is permitted but not to exceed 3" maximum rise. The sub floor shall be finished and filled after installation in the manner prescribed by the manufacturer of the floor covering.

Access doors/panels shall be provided where necessary to service transmission, engine, engine accessories, or other under-floor components, which are not readily accessible from the engine compartment, side panels or from the underside of the bus.

## **FLOOR COVERINGS**

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Floor covering shall be heavy duty non-skid transit Altro or approved equal flooring. The floor covering shall be attached continuously to the sub-floor by waterproof adhesives without voids. All seams and interfaces with the wall, wheelhousing, etc. shall be covered with stainless steel trim that will provide a floor that is free of tripping hazards and easy to clean by dry and wet wash with cleaning solutions. Clear or color matching silicone caulking shall be used at any point such as seams where moisture may enter into the flooring material.

The standee line shall be at least two inches wide and shall extend across the bus aisle in line with the driver's barrier. This line and the edge of the steps shall be Yellow.

Driver's foot operated switches shall be protected from moisture and dirt. Foot switches and other controls shall be installed to prevent entry of drafts. A heel wear plate shall be mounted at the base of the throttle and brake pedals.

## **WHEELCHAIR RAMP**

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The bus shall be equipped with a Lift-U LU18 or approved equal front door ramp mechanism that conforms to all requirements of the Americans with Disabilities Act (ADA). At a minimum the ramp will a 6:1 slope when the bus is kneeled and the ramp deployed. It is to be an all electrically operated system which will assume the normal entrance configuration when stowed. When stowed, the ramp should not exceed any of the normal bus undercarriage clearances. All ramp components and mechanisms shall be constructed of corrosion resistant materials and incorporate a design which affords maximum protection from the elements during normal bus operations. Should the ramp become inoperable through the use of electric power, the operator shall be able to open and close the ramp manually with very little effort.

The ramp shall be controlled by toggle switches, master on/off, up-down and stow-deploy. The control switches shall be of the spring loaded to a safe position type so that constant manual pressure is required by the operator during ramp

operation. All controls shall be clearly identified by function and present a reasonably foolproof and natural sequence of operation.

Visual and audible warning devices shall be located immediately to the rear of the front door. The audible warning device shall be activated only when the ramp is functioning.

Interlocking and fast idle provisions shall be incorporated so the ramp cannot be extended unless the entrance door is in the full open position the transmission in neutral and the parking brake engaged. The entrance door cannot be closed unless the ramp is in the fully stowed position. The bus service brakes shall be automatically applied when the ramp is in any position other than the stowed and locked position.

## **HVAC SYSTEMS**

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### **General**

The Heating, Ventilation and Air Conditioning (HVAC) climate control system shall be a Thermo-King T-14 or approved equal. The system shall be mounted in the rear of the bus and capable of maintaining the interior of the bus at the temperature and humidity levels suitable for all climatologically conditions throughout our geographical region. Accessibility and serviceability of components shall be provided without requiring maintenance personnel to climb-up on the roof of the bus.

### **Temperature Controls**

Operation of the climate Control System shall be controlled by a microprocessor based controller which maintains interior temperature at the desired set point. The controller shall be mounted behind the return air grill where it is accessible only by maintenance personnel. A rotary switch shall mounted on the dash panel to allow the driver to manually switch the HAVC system to Off, Cool, Vent High, Vent Low, Heat Low, Heat High Settings

### **Compressor and Refrigerant**

The HVAC system shall utilize a S391 screw type compressor and operate with 407C refrigerant.

### **Heater Core (s) and Water Lines**

Heater water lines shall be routed as much as possible through the inside of the bus. All lines not routed through the inside of the bus shall be properly insulated to control heat loss. Hand manual shut off valves for the heater core shall be provided in the water lines to provide for ease of replacement. All core(s) will be equipped with drain cocks to facilitate complete draining of the core(s). All flexible water hoses will be of the silicone type. Heater core must be replaceable without removing any major components.

### **Driver's Heater and Defroster**

An MCC or approved equal heater and defroster system shall be provided in the front dash compartment. A heater unit of at least 44,000 BTU output at 160 degrees F. water temperature is required. A two speed brushless blower motor shall be provided with a manual water valve shall be to control the flow of hot water to the core along with two hand shut off valves to facilitate replacement of the core and two shut off valves to facilitate replacement of the booster/marine pump.

This system shall be adequate to provide 65 degrees F temperature in the driver's area with an outside temperature of 0 degrees F. Defroster outlets shall be provided at the bottom of the windshield, and driver's side window so that the entire windshield, and side windows will be kept free from frost or fog. This system will also have an adjustable vent to apply heat to the driver's feet, and the complete system is to be under the direct control of the driver. The system shall be capable of operating without activating the main heater system.

### **Front door Threshold heater**

A MCC or approved equal 1 speed, 24 volt, 12 BTU front door threshold heater will be provided. The heater will be controlled by a toggle switch mounted on the driver's dash.

### **Auxiliary Dash Fan**

Two (2) 24 volt auxiliary fans shall be mounted on the left hand corner and center of bottom of destination sign compartment. A three (3) position control switch (high, low and off positions) shall be provided on driver's dash.

## **FRONT DOOR**

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The front door shall be a "slide glide" type inward opening, driver controlled, of corrosion resistant construction. Minimum clear opening shall be 31.00" inches. The front door shall have a minimum height of 75" inches. The overhead clearance between the top of the door opening and the highest point of the ramp shall be a minimum of 68 inches. Door panels shall

have both upper and lower glazing. A control valve in the driver's compartment shall shut off the power to, and/or dump the power from, the front door mechanism to permit manual operation of the front door with the bus shut down.

## **REAR DOOR**

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The rear or exit door shall be a two panel swing out type designed to provide a minimum clear opening of 26" inches and a minimum height of 77" inches. Rear doors shall be operator opened and spring closed. The closing of the door shall begin after the control has been moved to the closed position, and after the door has been fully opened. Door opening and closing speeds shall be adjustable. The rear door shall be equipped with a sensitive edge which will open the door automatically if an object is trapped between the doors. Door panels shall have both upper and lower glazing.

To preclude movement of the bus, an accelerator interlock shall lock the accelerator in the closed position and a brake interlock shall engage the rear axle service brake system when the front and rear door control is activated and the vehicle is moving below 3 mph. When vehicle is moving above 3mph the rear door shall remain locked.

Both the entrance and exit doors, if used, shall be controlled by single actuators units mounted in a compartment above the doors.

In the event of an emergency, it shall be possible to open the doors manually from inside the bus using a force of no more than 25 pounds after actuating an unlocked device at each door. The unlocking devices shall be clearly marked as an emergency only device and shall require two distinct actions to actuate. The door emergency unlocking device shall be accessible from the step well areas. When this emergency device is actuated, the door interlock brake system shall apply to stop the bus.

The meeting edges on doors shall be equipped with extruded rubber edges of the overlapping type, designed to preclude the entry of drafts and rain. All rubber parts on doors shall be of ozone-resistant material.

Doors shall be controlled by a five-position door valve, mounted to the left of the driver. The valve placement shall not interfere with the driver or be prone to catch the driver's sleeve. Air exhaust shall be vented outside the bus body. A valve shall be located near the driver's station to isolate the front door motor from the bus air system and release the doors for manual opening.

The exit door shall be provided with a release lever near the door to allow passengers to manually open the door in an emergency. The lever shall be located in an easily accessible location with a glass or plastic cover and hammer, and it shall be properly labeled. Both entrance and exit door controls shall allow maintenance personnel to adjust the opening and closing speed of each door independently.

## **ACCESSIBILITY (COMPARTMENTS, PANELS, DOORS)**

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The rear engine compartment door shall have a center mounted handle and shall lift upward hinged at the top. Gas operated shocks will provide assistance as the door is opened and shall secure access doors in the open position during inspection and servicing.

Access panels to the left and right side of the engine compartment shall be provided with expanded metal inserts to provide heat dissipation in the engine compartment. Access panels will be hinged to open upward and be designed with gas operated shocks will provide assistance as the door is opened and shall secure access doors in the open position during inspection and servicing. When closed, the doors will be secured to the body with a 5/16" square latch provided on the lower corners.

The battery access door shall be hinged to open upward and be designed with gas operated shocks will provide assistance as the door is opened and shall secure access doors in the open position during inspection and servicing. When closed, the doors will be secured to the body with a 5/16" square latch provided on the lower corners

There shall be separate access doors located on the outside of the bus for the battery disconnect switch, fuel fill, diesel emissions fluid, air tank drain valves, and the windshield washer fluid. All doors will be equipped with a well type securing latch. The door shall be hinged on the top or side, and able to be opened by hand with the assistance of any tool.

Engine compartment access through an access panel located under the rear settee shall be required. This panel shall include the largest size opening possible to allow maintenance access to the upper portions of the engine compartment. The rear settee seat shall be hinged on the top and when opened, secured with an appropriate device to hold it in the open position during inspection and servicing

Each bus shall be equipped an Electronics cabinet sized appropriate to house all electronic equipment including radio video recording, vehicle logic, APC and other electronic equipment. The cabinet shall be located on the left front wheelhouse and shall be lockable, completely water resistant and of steel construction. It shall have slide trays that automatically lock into place for easy maintenance of the equipment. The compartment shall be water resistant when the service door is secured. Ventilation fans shall be installed to keep the compartment temperature cool. Mounted inside the cabinet will be 12 volt, 24 volt and ground provisions to support all electronic devices.

A driver's box shall be provided behind the driver's seat mounted to the driver's barrier. The box shall be approximately six (6) inches wide, fourteen inches in height and sixteen inches in depth. The box shall be constructed of 080 steel primed and painted black.

## **STANCHIONS AND GRAB RAILS**

There shall be a horizontal grab rail dash mounted between the entrance door and the farebox and on the front wheel housings. Vertical stanchion grab rails shall be located at the entrance door modesty panel, curbside and streetside of the Wheelhousings. All stanchions and grab rails shall be stainless steel tubing (Optional Powder Coated) mounted from floor to ceiling or ceiling to passenger seat grab handles.

There shall be fourteen (14) vinyl coated nylon grab straps (35' and 40" bus) and ten (10) on (30' bus) positioned throughout the bus interior mounted to the horizontal stanchions.

A detailed seating layout showing various possible configurations of stanchion configurations shall be submitted at the time proposals are made.

## **MODESTY PANELS**

A clear modesty panel shall be provided behind the front entrance door from the wheelhousing to ceiling. Modesty panel must not obstruct drivers view. A modesty panel shall be provided behind the rear exit door and the first passenger seat in the upper section of the bus. The panel shall be constructed of melamine and framed on all sides with stainless steel tubing. Melamine colors will be determined at the per-production meeting.

A driver's barrier shall be provided. The barrier shall extend from the left side panel to the right rear of the driver's station. The back panel shall in no way detract from, or interfere with the safe, normal operation of the bus nor restrict full movement of the driver's seat.

## **DRIVER'S SEAT**

The driver's seat shall be a Recaro Ergo-Metro or approved equal high back, five-way mechanically adjustable with a 6" fore/aft travel and adjustable seat back angle. The seat shall have an air lumbar support integrated into the seat back and include a 2-point (Orange or Black) seat belt. The seat back shall incorporate a black shell and seat material shall be black vinyl. Driver's seat shall conform to FMVSS 207,209, and 210.

## **PASSENGER SEATING**

AMSECO Vision Passenger seats shall accommodate multiple types of seat layouts. Hip-to-knee room shall be a minimum of 26.50". Passenger seat frames shall be stainless steel with VR 50 fabric inserts. Installation shall be cantilevered without closeouts and T-Pedestal as applicable. Any exposed metal of the frame shall be stainless steel. Rear seats shall be hinged to gain access to engine compartment. Seat Proposers shall include seats layout options with proposed bus.

The AMSECO Metropolitan shall be provided as an option and priced separately. Manufactures are free to propose other seat options.

## **WHEELCHAIR ACCOMMODATION**

Two (2) Wheelchair tie-downs locations shall be incorporated and located as close to the front door of the bus as practical to ensure maximum aisle width and wheelchair maneuverability. The wheelchair are shall have aisle facing flip seats installed at the wheel chair positions.

The stop request system shall be mounted on the flip up seat bottom or on the side wall and consist of a 3.5" x 7" push pad and separate dash mounted indicator with audible signal for notification to the operator of an intended stop request by a wheelchair patron.



Maneuvering room inside the bus shall accommodate easy travel for a passenger in a wheelchair from the loading device through the bus to the designated parking area, and back out of the bus.

Accommodations, including passenger seatbelts for wheelchair passengers shall be provided. Passenger seat belts shall be of sufficient length to accommodate passenger in electric powered wheelchair or scooter and shall have a minimum useful length of 80 inches.

Proposers should provide a plan, including layout drawings for entry, maneuvering, parking, and existing of wheelchair passengers, applying to all ADA/FTA regulations with their proposals.

## **WHEELCHAIR SECURING SYSTEM**

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The Sure-Lok Dual Auto Lok w/ H-Sliding Arms shall be provided at each ADA location.

## **DRIVERS CONTROLS**

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### **Accelerator / Brake Pedal**

The accelerator pedal shall meet the requirements for FMVSS 124. Accelerator and brake pedals shall be designed for even lateral ankle motion. Foot surfaces of the pedals shall be faced with wear-resistant, non-skid replaceable material.

### **Parking Brake**

Parking Brake control valve shall be to the left of the driver and shall be configured so that it operated as a "pull" to stop/set and "push" to release with a clearly labeled yellow knob.

### **Transmission**

Electronically operated controls as approved by the transmission manufacturer.

### **Door and Door Pressure Release**

A 5 position control handle located to the left of the driver shall be provided. A front door air release valve shall be provided for the driver to release the air pressure to the front door.

### **Headlight High Beam Switch**

A floor mounted spring loaded foot switch shall be provided to control high and low beam headlamps.

### **Directional Signals**

A floor mounted spring loaded foot switch shall be provided to control directional signals.

### **Emergency/Four Way Flasher Switch**

A 2 position toggle switch with a red extension shall be provided close to the door control lever to operate the 4-way flashers.

### **Windshield Wiper and Washer**

The controls shall allow the driver to select variable sweep speeds or intermittent/pulse operation. Also these will control the distribution of washer fluid to the windshield.

### **Fast Idle Switch**

A fast idle toggle switch shall be provided. The fast idle shall be interfaced to the brake interlock system, system will not operate unless emergency/parking brake is applied and transmission is in neutral.

### **Driver Area Heating, Ventilation, Air Conditioning, and Defroster Controls**

The rotary control switch shall provide air to the windshield, driver's area and to the passenger compartment.

### **Engine Start**

Shall be a push button interlocked with the transmission controls to permit engine starting only in neutral and shall be located convenient to the driver.

### **Kneeling**

Shall be a guarded spring loaded toggle switch located on the primary panel, and shall function to allow the bus to kneel.

#### Wheelchair ramp

Shall be located on the primary panel, and shall function as described in the wheelchair specifications.

#### Public Address System

Shall be simple / self-explanatory and be conveniently located for driver use and have a volume control knob on either the primary or secondary panel and be an integral part of the voice annunciation system.

#### Interior Lighting Switch

Interior Lighting Switch shall be provided ON –NEUTRAL-OFF positions and be located on the primary or secondary panel, toggle switch only.

#### Driver's Area Light Switch

Shall be on-off type and will be located on the primary or secondary panel or on the light fixture. This light shall not operate when the master switch is OFF.

#### Passenger Signal Switch

Shall provide, SINGLE CHIME, NORMAL and OFF positions, located on the primary or secondary panel, toggle switch only.

#### Instrument Panel

The following gauges shall be included on the instrument panel:

- a) Speedometer / Odometer
- b) Battery Charge Indicators 12 and 24 volt.
- c) Air pressure gauge/Dual needle
- b) Fuel gauge

There shall be a light bar provided in front of the driver, over head with visual indicator lights to signal warning or fault conditions. All warning lights shall illuminate when the master electrical control is in the run or night run position and the engine is not operating. There shall be a test button used for testing lights and buzzers located on the primary panel. Manufacturer shall provide a layout of warning signals included in the proposal.

A coat hook and tieback loop shall be provided for the driver. It shall be mounted above and to the left rear of the driver's head level behind the driver's seat.

A driver's seat area light shall provide general illumination of the driver's station. It shall be suitable for reading and recovery of items on the floor. Switch location and control shall be as described in this section. This light shall be L.E.D.

## **WINDOWS, SASH, WINDSHIELD, WIPERS AND WASHER**

The passenger side windows shall be Ricon or approved equal hidden framed bonded fixed. All passenger windows will have a 6 mil film guard on the inside of the glass.

Windows in the Low Floor Area will be designated as egress windows and shall have a positive lock type emergency latch meeting the FMVSS-217. Each window shall have a permanent decal describing emergency window operation procedures.

The driver's side window shall be easily adjusted (less than 20 lbs. of effort to open and /or close) with one hand and it shall be of two-piece design with two half sections sliding horizontally without a positive holding latch. This window shall also incorporate a latch mechanism to allow its use as an emergency exit.

The windshield shall be of lightly tinted laminated safety plate or float glass meeting the requirements of FMVSS 205 and ANSI Z 26.1, at least 0.25 inch thick. The windshields will be designed to minimize glare from the dash, side panel, and interior passenger compartment lights. Pull down scissor style sun shades shall be provided on the left windshield and on the operator's side window. Shades shall be ½ mesh and ½ solid.

Two electric windshield wipers with intermittent wipe and wet arm shall be furnished. The wipers shall be operated by variable speed wiper motors and shall meet requirements of FMVSS 104. The control shall have a PARK position causing the blades to stop at or near the center of the bus in the vertical position.

A windshield washer meeting the requirements of FMVSS 104 shall be provided to spray cleaning solution onto the left and right sides of the windshield. A translucent reservoir shall be supplied, located in the dash compartment. The filler for the reservoir shall be easily accessible from the exterior of the bus, and a vent shall be provided to expedite filling.

## **MIRRORS**

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All mirrors must conform to the current Federal requirements.

### **Exterior Mirrors**

Mirrors shall be B&R or approved equal 8"x15" 2 piece. Both the flat and convex exterior mirrors shall be remote controlled and heated with black powder coated cast aluminum arms that return to original position when moved. Left mirror shall be mounted near the front upper at the driver's window. Right mirror shall be viewed through the upper right corner of windshield and mounted so as to provide maximum practical clearance to the ground. Mirrors must fold out of way of automatic washer. Two - 2 position (flat and convex) switches shall be provided in the driver's compartment for mirror adjustments. Exterior mirrors must utilize a waterproof "quick disconnect" for electrical wiring.

### **Interior Mirrors**

An 8 1/2" x 16" rear view mirror shall be provided on the front sign header.

A 6" diameter adjustable convex mirror over and forward of the front door shall be provided. An adjustable convex mirror shall be provided over/above and to the rear of the rear exit door. (Convex mirrors described above are to be used in conjunction with each other.) The glass in this mirror shall be replaceable.

## **BICYCLE RACKS**

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A black powder coated Sports Works DL2 or approved equal bicycle rack shall be provided as an option and priced separately.

## **ELECTRICAL SYSTEMS**

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The Electrical System (12/24 VDC) consists of the vehicle batteries and all other equipment that generate, distribute and use battery power throughout the vehicle (e.g., alternator, voltage regulator, wiring, relays, and connectors). Vehicle shall be SAE J1939 and J1708 communication compatible.

## **BATTERY AND BATTERY STORAGE**

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A stainless steel battery tray located in the front roadside of the bus under the driver's compartment shall be provided. The battery tray shall slide out, on rollers, with less than 50 lbs. of effort. The battery tray shall be protected against the accumulation of debris and road spray. Two twelve (12) volt lead acid filled thermal battery units, size 8D, with side post connectors with a minimum of 1300 cold cranking amps at zero degrees Fahrenheit with a reserve capacity of 425 minutes or greater shall be provided. In the event the batteries are unable to crank the engine, a plug shall be provided at the curbside rear of the bus to allow jump starting.

The battery shall be grounded to the vehicle chassis/frame at one location only, as close to the batteries as possible. When using a chassis ground system, the chassis shall be grounded to the frame in multiple locations, evenly distributed throughout the vehicle to eliminate ground loops. No more than four ground connections shall be made per ground stud. Electronic equipment requiring an isolated ground to the battery (i.e., electronic ground) shall not be grounded to the chassis.

## **CHARGING SYSTEM**

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A Niehoff C803 or approved equal Alternator shall be provided sized to supply the entire nighttime operating electrical load of the bus while providing at least twenty (20) percent of its current output for battery charging when the battery is fully discharged. The system shall supply a nominal 24 volts of direct current. Electrical power provided for the fare collection device all exterior lights and the radio compartment shall be 12 volts, DC. Precautions shall be taken to minimize hazards to service personnel. The power generating system shall be rated sufficiently higher than the total possible electrical load to maintain the charge on the batteries at all operating conditions including the engine at idle.

All circuits, except for those involved in propulsion system startup, shall be protected by circuit breakers or fuses. Fuses shall be used only where it can be demonstrated that circuit breakers are not feasible, and they shall be easily accessible for replacement.

## **HYBRID ELECTRIC CHARGING SYSTEM**

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A Vanner HBA and HVDM DC to DC coveter shall be used in place of the typical belt driven alternator. The converter shall be capable of converting the high voltage from the hybrid system into a variable voltages to operate the 12/24 volt bus charging system and ancillary system including but not limited to electric HVAC, cooling, etc., that may be added to the

bus. All circuits, except for those involved in propulsion system startup, shall be protected by circuit breakers or fuses. Fuses shall be used only where it can be demonstrated that circuit breakers are not feasible, and they shall be easily accessible for replacement

## **HYBRID ELECTRIC ENERGY STORAGE**

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A roof mounted energy storage system shall be composed of an advanced technology battery system along with associated power electronics interface and controls, diagnostic systems, and environmental controls. The energy storage devices used and their arrangement shall be selected and sized to meet bus performance specifications and design goals, including reduced vehicle emissions, improved vehicle fuel economy, low life cycle cost, safety, maintainability, Reliability, and simple yet robust diagnostics. The minimum design life of the energy storage system shall be 6 years.

The storage system shall incorporate a management system to monitor and control the operating conditions within each energy storage system module, including voltage, current, and temperature. This system shall include over-current and over-temperature protection feature that will disconnect and/or isolate an adverse condition.

## **HYBRID HIGH VOLTAGE DEVICES**

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All devices that contain circuits or equipment energized or capable of being energized at high voltage shall be contained within protective enclosures or enclosed bus body compartments. All access covers for these compartments shall be permanently labeled with 'DANGER HIGH VOLTAGE' signs. All conductors carrying voltages of 50 VAC or greater, shall be considered High Voltage (HV). All HV wiring must be installed separately from low voltage wiring.

## **ELECTRICAL COMPONENTS**

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All electrical components, including switches, relays, flashers, and circuit breakers, shall be of Heavy-Duty designs. To the extent practicable, these components shall be designed to last the service life of the bus. Sockets of plug-in components shall be positively retained. Any manual reset circuit breakers critical to the operation of the bus shall be mounted in a location convenient to the driver with visible indication of open circuits. All electric motors except cranking motors shall be brushless type motors. Electric motors shall be located for easy replacement.

A single master switch shall be provided near the battery compartment for the disconnecting of all battery positives (12V & 24V) except for safety devices such as fire suppression system and other systems as specified. The location of the master battery switch shall be clearly identified on the exterior access panel, be accessible in less than 10 seconds for deactivation, and prevent corrosion from fumes and battery acid when the batteries are washed off or are in normal service. The access door shall be labeled "Battery Emergency Shut-Off Switch."

Dual electric horns, one "D" note and one "F" note shall be provided and shall be mounted in a manner to prevent entry of water and dirt into horn trumpets. The steering wheel horn button shall be non-reflecting and of the umbrella type to protect contracts from dirt and debris.

The ambulatory passenger signal shall be the pull cords conveniently located so standing and seated passengers can easily reach it, this includes down the mullions. The pull cords shall be accessible from the exit door area. There shall be a lighted display sign which indicates "STOP REQUESTED" when the signal is activated. The signal chime shall operate once, and the sign shall light and remain lit with the chime disabled until the next stop when the front doors or rear doors have been opened, resetting the system. The chime shall be distinctive. The volume on the chime shall be adjustable between 90 and 55 Db. The lighted display shall be located on or near the ceiling at the front of the bus in view of the passengers. A light on the instrument panel shall be lit when the display sign is lit.

There shall be a second passenger signal of a different tone that meet the ADA requirements mounted to the bottom of the flip seat for the mobility aid users that alerts the operator when a mobility aid user wishes to disembark. One such system that meets this minimum requirement is the Tape Switch Corp. 3.5"x7" yellow push pad. There shall be two lights on the operator's front dash that indicate when an ambulatory or non-ambulatory passenger wishes to disembark.

## **MULTIPLEXING**

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All vehicles shall be equipped with a Dinex or approved equal multiplexing system. The primary purpose of the multiplexing system is control of components necessary to operate the vehicle. This is accomplished by processing information from input devices and controlling output devices through the use of an internal logic program. Versatility and future expansion shall be provided for by expandable system architecture. The multiplex system shall be capable of accepting new inputs and outputs through the addition of new modules and/or the utilization of existing spare inputs and outputs.

All like components in the multiplex system shall be modular and interchangeable with self-diagnostic capabilities. The modules shall be easily accessible for troubleshooting electrical failures and performing system maintenance.

Multiplex input/output modules shall use solid-state devices to provide extended service life and individual circuit protection. Ten percent (10%) of the total number of inputs and outputs (or at least one each) at each zone location shall be designated as spares.

At a minimum, information shall be made available via a communication port on the multiplex system. The location of the communication port shall be easily accessible. The multiplex system shall have a proven method of determining its status (system health and input/output status) and detecting either active (Online) or inactive (Offline) faults through the use of on-board visual/audible indicators. In addition to the indicators, the system shall employ an advanced diagnostic and fault detection system, which shall be accessible via either a personal computer (PC) or a hand held unit. Either unit shall have the ability to check logic function.

The multiplex system shall have security provisions to protect its software from unwanted changes. This shall be achieved through any or all of the following procedures: password protection, limited distribution of the configuration software, limited access to the programming tools required to change the software, and hardware protection that prevents undesired changes to the software. Provisions for programming the multiplex system shall be possible through a PC/laptop. The multiplex system shall have proper revision control to insure that the hardware and software is identical on each vehicle equipped with the system.

## **LIGHTING**

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### **Interior Lighting**

All interior lighting shall LED lighting where possible.

The passenger interior lighting system shall be an I/O Controls or approved equal LED lighting system. The front entrance area and curb lights shall illuminate when the front door is open and master run switch is in the "Lights" positions. Rear exit area and curb lights shall illuminate when rear door is unlocked. Step lighting for the intermediate platform between lower and upper floor levels shall be provided and shall illuminate in all engine run positions. The step lighting shall be low profile to minimize tripping and snagging hazard for passengers and shall be shielded as necessary to protect passengers' eyes from glare.

The bus shall be equipped with 2.5" round flange mounted LED step well lamps mounted in accordance with the ADA requirements. All lamps shall be recess mounted to minimize protrusion into the stairwell area. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light.

The driver's area shall have a light to provide general illumination and it shall illuminate the driver's area. This light shall be controlled by a toggle switch that is convenient to the driver.

### **Exterior Lighting**

Exterior lighting shall comply with all applicable State and Federal regulations. All exterior lights shall be designed to prevent entry and accumulation of moisture or dust, and each lamp shall be replaceable in less than 5 minutes by a 2M mechanic helper. Commercially available LED (Light Emitting Diode)-type lamps shall be used wherever possible. Lights mounted on the engine compartment doors shall be protected from the impact shock of door opening and closing. Lamps, lenses and fixtures shall be interchangeable to the extent practicable. Two hazard lamps at the rear of the bus shall be visible from behind when the engine service doors are opened. Light lenses shall be designed and located to prevent damage when running the vehicle through an automatic bus washer. Lights located on the roof and sides (directional) of the bus shall have protective shields or be of the flush mount type to protect the lens against minor impacts.

LED high and low beam headlights are required and shall be controlled from a sealed, moisture-protected foot switch located on the floor in the driver's station. The sealed beam units shall be of the latest heavy-duty type and be ruggedly mounted to maintain adjustment under transit operating conditions. Headlights shall be wired to operate on reduced voltage in the run position. Headlights shall meet FMVSS 108 and be SAE/DOT compliant. These light assemblies shall be certified to pass J1455 test criteria.

The front door area and ramp area shall be illuminated with 1 18" white led strip lights that produce 450 lumens of light. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light. Lamps at the front and rear

passenger doorways shall comply with ADA requirements and shall activate only when the doors open. These lamps shall illuminate the street surface to a level of no less than 1 foot-candle for a distance of 3 feet outward from the outboard edge of the door threshold. The lights may be positioned above or below the lower daylight opening of the windows. Lights shall be led 18" long white strip lights that produce 300 lumens of light.

All clearance and I.D. lights shall be flush mount LED type. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light. All lenses shall be smooth to prevent dirt entrapment and ease the washing process.

The reverse lights shall be LED type. The lamp shall be constructed with a single piece lens with the cavity seal accomplished via a potting process, a welded lens to housing construction is not allowed. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light. All lenses shall be smooth to prevent dirt entrapment and ease the washing process. The entire LED assembly shall be specially coated to protect the light from chemical and abrasion degradation. The light shall be supplied grommet mount or flange mount.

The stop, tail and turn lights shall LED type lights. The brake lights shall be fabricated with the use of a current regulator circuit to the LED's that allows for operation of the device from an internal active regulator circuit that assures uniform illumination of all the LED down to 8 volts. In addition the construction of the device shall be a single piece lens with the cavity seal accomplished via a potting process, a welded lens to housing construction is not allowed. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light.

All lenses shall be smooth to prevent dirt entrapment and ease the washing process. The entire LED assembly shall be specially coated to protect the light from chemical and abrasion degradation. The brake and taillights shall be red while the turn signal shall be amber. The amber rear turn signal shall meet all of the requirements of this paragraph with the exception of the requirement of the regulator circuit.

The side turn signals shall be amber 18 series lights. These lights shall be guarded for protection. The light shall be visible from the rear and front of the bus as well as outward. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light.

The front turn signals shall be amber led lights. These lights shall be specially coated to protect the light from chemical and abrasion degradation. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light.

The bus shall be equipped with surface mount rectangular LED step well lamps mounted in accordance with the ADA requirements. The light should have 3 mounting holes. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. The light shall be dual 12 and 24 volt. No interim connector shall be allowed on the body of the light.

Lights shall be provided in the engine and all other compartments, where service may be required, to generally illuminate the area for night emergency repairs or adjustments. The engine compartment shall utilize 3 12" white led strip lights that produce 300 lumens of light. All electrical connections to the LED light shall be by wire coming from the light housing and terminated with a Packard Weather Pak connector. No interim connector shall be allowed on the body of the light. Lights shall be controlled with a switch located near the rear start controls in the engine compartment. Necessary lights, located in other service compartments, shall be provided with switches on the light fixture or convenient to the light.

## **DESIGNATION SIGNS**

A Twin Vision or approved equal 100% all LED Amber electronic destination sign system shall be provided. The sign system shall be controlled by an OCU located in the driver's compartment. Flash memory integrated circuits shall be capable of storing and displaying up to 10,000 message lines. Message memory shall be changeable by the use of a standard jump drive. A silent alarm switch is required to activate the sign.

One (1) Front sign 16 rows x 156 columns

One (1) Side sign, on the curb side, 14 rows x 108 columns

Operators Control Unit (OCU)

The Front Sign shall be mounted on the front of the Bus, near the top edge of the body, behind windshield protection, and in an enclosed but accessible compartment.

The Side Sign shall be located as follow; on the right side (curb side) of the Bus near the front door mounted near the top of an existing.

A rear mounted sign (external) 16 rows x 48 columns shall be provided as an option a priced separately.

All Signs shall be enclosed in a manner such as to inhibit entry of dirt, dust, water and other contaminants during normal operation or cleaning. Access shall be provided to clean the inside of the Bus window(s) associated with the Sign and to remove or replace the Sign components. Access panels and display boards shall be mounted for ease of maintenance/replacement. The front sign compartment shall have a 24volt blower and be activated by the heated mirror glazing switch.

## **VIDEO SURVEILLANCE SYSTEM**

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Should a Video Surveillance option be selected it shall be capable of displaying up to ten (10) cameras located strategically placed throughout the interior and exterior of the bus to be determined at the pre-production meeting. The system shall include a 1 Terabyte hard drive, GPS and WI-FI capability and a G-Force impact sensor.

## **PUBLIC ANNOUNCEMENT SYSTEM**

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An REI model 750040 or approved equal public announcement system shall be included. The system shall include eight (8) speakers in the 40' bus and Six (6) speakers in the 30' bus, flush or semi-flush mounted shall be installed along or near the centerline of the bus ceiling to ensure adequate sound distribution. A gooseneck microphone located in the driver's compartment shall be activated through a foot switch located on the left side of the driver compartment floor.

## **INTELLIGENT TRANSPORTATION SYSTEM (ITS)**

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Should an ITS system option be selected it will take the place of the base public announcement system and be configured to the procuring agencies specification.

## **MOBILE RADIO SYSTEM**

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A12V-40A Direct from Battery & 12V-10A thru ignition electrical circuit shall be provided to between the radio power supply in the electrical cabinet and the control head. A Radio control head mounting plate shall be installed on the right side of the driver's dash in a location to provide easy access for driver operation. An ASP 572 @ 450 – 47- MHZ antenna shall be mounted on the roof of the bus and the cable routed to the electrical storage box on the streetside wheelhousing.

## **FARE COLLECTION**

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A Farebox mounting pedestal shall be installed. The location of this pedestal shall not restrict traffic in the vestibule or access to the driver's area and shall not restrict operation of driver controls. A power and ground circuit shall be provided under the floor of the farebox platform with an access hole on the side of the platform. The floor under the fare box shall be reinforced by eighteen gauge steel plate, to provide a sturdy mounting platform and to prevent shaking of the farebox.

## **FIRE SUPPRESSION SYSTEM**

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Each vehicle shall be equipped with an Amerex model V25 or approved equal automatic thematic fire suppression system to provide adequate coverage of fire suppression in the engine compartment and main electrical box areas. At a minimum, units shall consist of a 25 pounds ABC chemical cylinder, 3 stainless steel temperature sensitive weather proof thermostats, 4 nozzles, and a control panel mounted in the driver's compartment as minimum equipment.

The system shall be totally self-contained with all lines, fittings, brackets, and thermal release heads within the appropriate compartments, strategically placed, to provide the best protection. The system shall incorporate a telltale, dash mounted operator warning light, audible indicator and switch, automatically shutting off all fans and climate control systems in the event of discharge. The system installed shall be certified by the vehicle manufacturer that it is suitable for use in the proposed vehicle in case the unit fails to function during an on board vehicle event or fire. Each vehicle shall be delivered with a certificate identifying the vehicle identification number (VIN) for which it applies. The system shall be U.L., U.C.L., and F.M. listed and meets all D.O.T. and F.M.V.S.S. Regulations and is certified by the vehicle and equipment manufacturer.

Should the CNG option be selected, the Amerex Safety Net system Fire Suppression and Methane Detection system or approved equal shall be included in the price of the CNG propulsion system option. The methane detection system will have a minimum of four (4) sensors located in the tank area and engine compartment as determined by the manufacturer.

## **SAFETY EQUIPMENT**

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Furnish a portable 5 pound capacity dry chemical ABC type fire extinguisher, including mounting bracket and inspection tag, on each bus. The extinguisher shall be painted red. It shall be equipped with a chained safety pin. Buses shall be equipped with a safety triangle reflector kit with a durable protective container. These items shall be mounted neatly in the driver's area. (Each Bus must have a First Aid Kit and a Bio Hazard Kit to be mounted behind the driver seat.)

## **PAINT AND GRAPHICS**

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### **Paint (Exterior)**

The bus exterior shall be primed as recommended by the manufacturer and shall be painted two (2) colors with black masking around the windows. There shall be no bare or exposed metal surfaces showing on the exterior of the bus, exclusive of ornamentation and accessories.

### **Paint (Interior)**

Selections of interior and trim color shall be determined at the pre-production meeting. This shall include but not be limited to the following: ceiling, walls, floors and modesty panels.

### **Graphics (Exterior)**

Exterior graphics shall be in accordance with Procuring Agency current design. At a minimum there shall be one (1) reflective strip and Procuring Agency's logo on each side and back of bus.

### **Fleet Numbers**

Buses shall have fleet numbers applied both on the interior and exterior of the bus in sequence with factory serial numbers. Each individual order will include the correct starting number and the location, size and color of numbers. Number shall be 2" black or white in color. Final locations shall be determined at the pre-production meeting.

### **Interior Decals**

Interior decals such as but not limited to the following, No Smoking, Exit door, Emergency Exit, Watch Your Step, Wheelchair instructions and "Reserved for Wheelchairs," etc. shall be provided. All decals shall be in English and Spanish. All decals shall be in conformance with Federal regulations.

### **Metal Builders Plate**

A metal builder's plate shall be installed on the inside of the front of the bus, listing the manufacturer's name, bus and chassis model, serial number and date of manufacture. The plate shall be installed with permanent fasteners. Include a FMVSS sticker in addition to the builder's plate.

## **WARRANTIES**

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### **Warranty and Warranty Procedures**

Warranties in this document are in addition to any statutory remedies or warranties imposed on the Supplier. Consistent with this requirement, the Supplier warrants and guarantees to the Procuring Agency each complete Bus, including sub-systems and components as follows:

COMPONENT	WARRANTY TERM
BASIC BUS	1 YR / 50,000 Miles
BODY STRUCTUAL	3 YR / Unlimited Miles
STRUCTUAL INTEGRITY / CORROSION	7 YR / 350,000 Miles
ENGINE	2 YR / Unlimited Miles
TRANSMISSION	2 YR / 100,000 Miles
AXLES	2 YR / 100,000 Miles
BRAKES (EXCLUDES FRICTION MATERIAL)	1 YR / 100,000 Miles
HVAC	2 YR / Unlimited Miles



A/C COMPRESSOR	2 YR / Unlimited Miles
WHEELCHAIR RAMP	2 YR / Unlimited Miles
ALTERNATOR	1 YR / 50,000
AIR COMPRESSOR	2 YR / Unlimited Miles
DOOR SYSTEM	2 YR / 100,000
STARTER	2 YR / Unlimited Miles

The warranty on repairs to items or subsystems during the warranty period shall be extended for the time and/or miles of the remaining warranty or the manufacturer's basic warranty, whichever is greater, beginning on the repair/replacement date that the correction was performed. The bus manufacturer shall forward and honor any warranty offered by the component manufacturer(s), which is longer than required above.

#### **VOIDING OF WARRANTY**

The warranty shall not apply to any part or component of the bus that has been subject to misuse, negligence, accident, or that has been repaired or altered in any way so as to adversely affect its performance or reliability, except insofar as such repairs were made in accordance with the Supplier's maintenance manuals and the workmanship was in accordance with recognized standards of the industry.

#### **EXCEPTIONS TO WARRANTY**

The warranty shall not apply to scheduled maintenance items such as filters. Consumable items are only fuel, oil and lubricants. Items with progressive wear characteristics such as belts, wiper blades, etc. are not excluded from warranty and should not be of poor quality that requires frequent change. The warranty shall not apply to tires, nor to any items that may be furnished by the Procuring Agency such as radios, fare boxes, and other auxiliary equipment, except insofar as such equipment may be damaged by the failure of a part, component, or design for which the Supplier is responsible.

#### **DETECTION OF DEFECTS**

The Procuring Agency shall, at any time within the warranty period, repair any defect detected to insure the bus being kept in service and the Supplier's representative will be notified by written claim or verbal communication. A claim will be submitted for signature by the Procuring Agency within thirty (30) calendar days of the failure.

#### **SCOPE OF WARRANTY REPAIRS**

When major warranty repairs are required that are beyond the scope of the Agencies capability or manpower, the Procuring Agency and the Supplier's representative shall agree within ten (10) calendar days after notification on the most appropriate course of action for the repairs and the exact scope of the repairs to be performed.

#### **FLEET DEFECTS**

A fleet defect is defined as a 25 % failure of identical items or sub-systems of a single order.

#### **NOTIFICATION OF FLEET DEFECTS**

Upon determination that a fleet defect exists, the Supplier will be notified by the Procuring Agency. This notice shall be communicated by letter to the Supplier.

#### **SCOPE OF FLEET DEFECT PROVISIONS**

The Supplier shall promptly, upon notification, correct all fleet defects as defined above and undertake a work program designed to prevent the occurrence and reoccurrence of the same defect in all buses purchased under this contract. Detailed instructions for any work program must be submitted to the Procuring Agency, in writing, before any work commences.

#### **WARRANTY CLAIM FORMS**

The Supplier must supply the Procuring Agency with all documents necessary for the filing of warranty claims. The documents will be delivered in conjunction with the delivery of the first Bus.

#### **QUALITY CONTROL / QUALITY ASSURANCE**

The Contractor, the Contractor's manufacturing plant and organization shall have an in-house quality control/ quality assurance program that meets the Agencies minimum standards.

#### **INSPECTOR**

The Procuring Agency may be represented at the Contractor's plant by Inspector(s). They shall monitor, in the Contractor's plant, the manufacturer of transit buses built under this procurement. The Inspectors shall be authorized to approve the

delivery acceptance tests, and to release the buses for delivery. Upon request to the quality assurance supervisor, the Inspector shall have access to the Contractor's quality assurance files related to this procurement. These files shall include drawings, material standards, parts lists, inspection processing and reports, and records of defects.

The contractor shall provide office space for the Inspector in close proximity to the final assembly area. This office space shall be equipped with desks, outside and inter-plant telephones, internet access, file cabinet, chairs, copy machine, printer, and clothing lockers sufficient to accommodate the Inspector's staff. The office space shall be properly heated, air-conditioned. The presence of these Inspectors in the plant shall not relieve the Contractor of its responsibility to meet all of the requirements of this procurement.

#### **LEGAL REQUIREMENTS**

The contractor shall comply with all applicable Federal, state and local regulations in effect at the date of manufacture. These shall include, but not be limited to, Federal ADA, Federal EPA, FMVSS and FMCSR regulations, State Biodiesel Vehicles' Warranties (S1277 or G.S. 143-58.4), as well as other state and local accessibility, safety and security requirements. Local regulations are defined as those below the state level.

In accordance with N.C. G. S. 20.116, North Carolina prohibits the operation of any passenger buses with a Gross Vehicle Weight exceeding 40,000 lbs.

In the event of any conflict between the requirements of this Specification and any applicable legal requirement, the legal requirement shall prevail. Technical requirements that exceed the legal requirements are not considered to conflict.

#### **RESPONSIBILITIES FOR SYSTEMS INTEGRATION & TESTING**

Upon bid award, the vehicle manufacturer shall analyze and become familiar with the Procuring Agency's specifications, functional requirements and vehicle operational characteristics, as described herein. Based upon this analysis, the vehicle manufacturer shall provide the subsystem requirements to the subsystem supplier as may be needed to ensure proper functioning of those subsystems and their integration with other vehicle subsystems. (i.e., Procuring Agency specifications and/or manufacturer's specific requirements)

The vehicle manufacturer shall bear the responsibility of ensuring that the Procuring Agency's logic requirements will result in the safe operation of the vehicle, and shall make the Procuring Agency aware of any inconsistencies regarding normal vehicle operations.

The vehicle manufacturer shall demonstrate proper integration of all on-board subsystems in accordance with the Procuring Agency's specification requirements prior to final inspection and delivery of the buses.

### **OFFERER VEHICLE TECHNICAL INFORMATION**

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The Offeror shall submit with their bid(s) for review by the Procuring Agency the following Vehicle Technical Information Data Sheets to confirm their proposed vehicle and components are in compliance with the requirements of the Technical Specifications. A separate set of sheets is required for each bus for which the Offeror intends to submit a bid. Submission of this data should not preclude the Offeror from including additional or supplemental Technical Information, descriptive literature, or equipment brochures in their own format, which further describes their bus.

TECHNICAL INFORMATION FOR \_\_\_\_\_ BUS (Enter all applicable selections)

Choose from: HEAVY DUTY 40' or 30' LOW FLOOR DIESEL; 40' or 30' HYBRID ELECTRIC diesel parallel propulsion system; 40' or 30' hybrid-electric diesel series propulsion system; or 30' or 40' GNG PROPULSION SYSTEM.

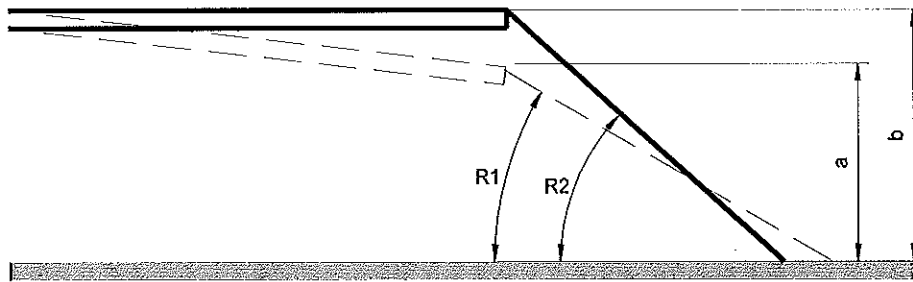
- A. BUS MANUFACTURER \_\_\_\_\_  
Bus Model \_\_\_\_\_
- B. UNDERSTRUCTURE MANUFACTURER \_\_\_\_\_  
Model Number \_\_\_\_\_

C. BASIC BODY CONSTRUCTION

1. Type \_\_\_\_\_
2. Tubing or frame member Thickness & Dimensions
  - a. Overstructure \_\_\_\_\_
  - b. Understructure \_\_\_\_\_
3. Skin Thickness and Material
  - a. Roof \_\_\_\_\_
  - b. Sidewall \_\_\_\_\_
  - c. Skirt Panel \_\_\_\_\_
  - d. Front End \_\_\_\_\_
  - e. Rear End \_\_\_\_\_
4. Flooring
  - a. Material \_\_\_\_\_
  - b. Thickness \_\_\_\_\_
  - c. Manufacturer \_\_\_\_\_
5. Fuel Tank(s)
  - a. Capacity \_\_\_\_\_
- b. Material \_\_\_\_\_
- c. Thickness \_\_\_\_\_
- d. Manufacturer \_\_\_\_\_

DIMENSIONS (See 5.1.6)

1. Overall Length
  - a. Over Bumpers \_\_\_\_\_ Ft. \_\_\_\_\_ In.
  - b. Over Body \_\_\_\_\_ Ft. \_\_\_\_\_ In.
2. Overall Width
  - a. Over Body excluding Mirrors \_\_\_\_\_ In.
  - b. Over Body including Mirrors - driving position \_\_\_\_\_ In.
3.
  - a. Over all Height (maximum) \_\_\_\_\_ In.
  - b. Overall Height (main roof line) \_\_\_\_\_ In.
4. Angle of Approach \_\_\_\_\_ Deg.
5. Breakover Angle \_\_\_\_\_ Deg.
6. Angle of Departure \_\_\_\_\_ Deg.
7. Doorway Dimensions(See 5.4.5) Front Rear
  - a. Clear Door Width \_\_\_\_\_ in \_\_\_\_\_ in
  - b. Doorway Height \_\_\_\_\_ in \_\_\_\_\_ in
  - c. Knuckle Clearance(See 5.4.5) \_\_\_\_\_ in \_\_\_\_\_ in
8. Step Height from Ground (measured at center of doorway with bus empty. (See 1.6 and 3.1)



Kneeled (a) \_\_\_\_\_ inches      Front Step      \_\_\_\_\_ inches      Rear Step  
 Unkneeled (b) \_\_\_\_\_ inches      \_\_\_\_\_ inches

9. Interior Head Room (center of aisle) (See 5.1.6)

- a. Front Axle Location \_\_\_\_\_ in.  
 b. Drive Axle Location \_\_\_\_\_ in.

10. Aisle Width Between Transverse Seats (min. - See 5.4.5)

- a. Lower Floor \_\_\_\_\_ in.  
 b. Upper Floor \_\_\_\_\_ in.

11. Floor Height Above Ground (centerline of bus - See 5.1.6)

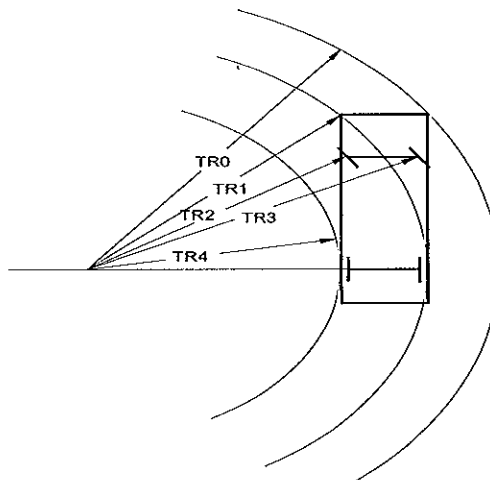
- a. at Front door \_\_\_\_\_ in.  
 b. at Rear door \_\_\_\_\_ in.

12. Minimum Ground Clearance (between bus and ground, with bus unkneeled - See 5.3.1)

- a. Excluding Axles \_\_\_\_\_ in.  
 b. Including Axles \_\_\_\_\_ in.

13. Horizontal Turning Envelope (see diagram below and 5.1.6)

- a. Outside Body Turning Radius, TR0  
 including bumper) \_\_\_\_\_ Ft. \_\_\_\_\_ In.  
 b. Front Inner Corner Radius, TR1 \_\_\_\_\_ Ft. \_\_\_\_\_ In.  
 c. Front Wheel Inner Turning Radius, TR2 \_\_\_\_\_ Ft. \_\_\_\_\_ In.  
 d. Front Wheel Outer Turning Radius, TR3 \_\_\_\_\_ Ft. \_\_\_\_\_ In.  
 e. Inside Body Turning Radius, TR4  
 (including bumper) \_\_\_\_\_ Ft. \_\_\_\_\_ In.



14. Wheelbase (See 5.1.6)

\_\_\_\_\_ in.

15. Passenger Capacity Provided (See 5.1.6)

a. Total Maximum Seating \_\_\_\_\_

E. WEIGHT OF BUS (See 5.1.6)

	No. of People	Front Axle			Rear Axle			TOTAL BUS
		Left	Right	Total	Left	Right	Total	
Empty Bus Full Fuel & Farebox								
Fully Loaded Standee +Seated Full Fuel & Driver Total	_____ _____ _____							
GVWR								
GAWR								

F. ENGINE, MAIN (See 2.2)

1. Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Model Number \_\_\_\_\_
4. No. of Cylinders \_\_\_\_\_
5. Net S.A.E. Horsepower \_\_\_\_\_ HP at \_\_\_\_\_ RPM
6. Net S.A.E. Torque \_\_\_\_\_ lb. ft. at \_\_\_\_\_ RPM
7. Crankcase Oil Capacity \_\_\_\_\_ gals.
8. Turbocharger, Make & Model \_\_\_\_\_
9. Speed at Idle \_\_\_\_\_ RPM
10. Speed at Fast Idle \_\_\_\_\_ RPM

G. HYBRID-ELECTRIC SYSTEM (5.2.3)

1. Engine Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Model Number \_\_\_\_\_
4. No. of Cylinders \_\_\_\_\_
5. Net S.A.E. Horsepower \_\_\_\_\_ HP at \_\_\_\_\_ RPM
6. Propulsion System \_\_\_\_\_
7. Energy Charging System \_\_\_\_\_
8. Energy Storage System \_\_\_\_\_
9. Power Inverter \_\_\_\_\_
10. Transmission \_\_\_\_\_

H. VOLTAGE REGULATOR

1. Manufacturer \_\_\_\_\_
2. Model \_\_\_\_\_

I. VOLTAGE EQUALIZER

1. Manufacturer \_\_\_\_\_
2. Model \_\_\_\_\_

J. ALTERNATOR

1. Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Model \_\_\_\_\_
4. Output at Idle \_\_\_\_\_ Amps
5. Output at Maximum Speed \_\_\_\_\_ Amps
6. Maximum Warranted Speed \_\_\_\_\_ rpm
7. Speed at Idle \_\_\_\_\_ rpm
8. Drive Type \_\_\_\_\_

K. STARTER MOTOR

1. Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Model \_\_\_\_\_

L. COOLING SYSTEM (See 5.2.2)

1. Radiator/Charge Air Cooler
  - a. Manufacturer \_\_\_\_\_ / \_\_\_\_\_
  - b. Type \_\_\_\_\_ / \_\_\_\_\_
  - c. Model Number \_\_\_\_\_ / \_\_\_\_\_
  - d. Number of Tubes \_\_\_\_\_ / \_\_\_\_\_
  - e. Tubes Outer Diameter \_\_\_\_\_ In. / \_\_\_\_\_ In.
  - f. Fins Per Inch \_\_\_\_\_ Fins / \_\_\_\_\_ Fins
  - g. Fin Thickness \_\_\_\_\_ In. / \_\_\_\_\_ In.
2. Total Cooling and Heating System Capacity \_\_\_\_\_ Gals
3. Radiator Fan Speed Control \_\_\_\_\_ Type
4. Surge Tank, Capacity \_\_\_\_\_ Qts.
5. Engine Thermostat Temperature Setting
  - a. Initial Opening \_\_\_\_\_ ° F
  - b. Fully Closed \_\_\_\_\_ ° F
6. Overheat Alarm Temperature Sending Unit Setting \_\_\_\_\_ ° F
7. Shutdown Temperature Setting \_\_\_\_\_ ° F

M. TRANSMISSION (See 5.2.2)

1. Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Model Number \_\_\_\_\_
4. Speeds \_\_\_\_\_
5. Gear Ratios Forward \_\_\_\_\_ Reverse \_\_\_\_\_
6. Shift Speeds
  - a. 1st - 2nd \_\_\_\_\_ mph
  - b. 2nd - 3rd \_\_\_\_\_ mph
  - c. 3rd - 4th \_\_\_\_\_ mph
  - d. 4th - 5th (if applicable) \_\_\_\_\_ mph
  - e. 5th - 6th (if applicable) \_\_\_\_\_ mph
7. Fluid Capacity [Including heat exchanger and filter(s)] \_\_\_\_\_

N. AXLE, REAR (See 5.2.2)

1. Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Model Number \_\_\_\_\_
4. Gross Axle Weight Rating \_\_\_\_\_ lbs.
5. Axle Load \_\_\_\_\_ lbs.
6. Axle Ratio \_\_\_\_\_

O. SUSPENSION SYSTEM (See 5.3.1)

1. Manufacturer \_\_\_\_\_
2. Type: Front \_\_\_\_\_  
Rear \_\_\_\_\_
3. Springs: Front \_\_\_\_\_

Rear

P. WHEELS AND TIRES

1. Wheels (See 5.3.1)
  - a. Make \_\_\_\_\_
  - b. Size \_\_\_\_\_
  - c. Capacity \_\_\_\_\_ lbs.
  - d. Material \_\_\_\_\_
2. Tires (See 5.3.1)
  - a. Manufacturer \_\_\_\_\_
  - b. Type \_\_\_\_\_
  - c. Size \_\_\_\_\_
  - d. Load Range/Air Press. \_\_\_\_\_ lbs./p.s.i.

Q. AXLE, FRONT (See 3.2)

1. Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Model Number \_\_\_\_\_
4. Gross Axle Weight Rating \_\_\_\_\_ lbs.
5. Axle Load \_\_\_\_\_ lbs.

R. STEERING, POWER (See 5.3.2)

1. Pump
  - a. Manufacturer & Model No. \_\_\_\_\_
  - b. Type \_\_\_\_\_
  - c. Relief Pressure \_\_\_\_\_ psi
2. Booster/Gear Box
  - a. Manufacturer & Model No. \_\_\_\_\_
  - b. Type \_\_\_\_\_
  - c. Ratio \_\_\_\_\_
3. Power Steering Fluid Capacity \_\_\_\_\_ gals
4. Maximum Effort at Steering Wheel \_\_\_\_\_ lbs.  
(unloaded stationary coach on dry asphalt pavement)
5. Steering Wheel Diameter \_\_\_\_\_ in.

S. BRAKES (See 5.3.3)

1. Make of Fundamental Brake System \_\_\_\_\_
2. Brake Chambers Vendor's Size & Part No.
  - a. Front \_\_\_\_\_
  - b. Rear \_\_\_\_\_
3. Brake Operation Effort \_\_\_\_\_
4. Slack Adjuster's Vendor's Type & Part No.
  - a. Front
    - 1) Right \_\_\_\_\_
    - 2) Left \_\_\_\_\_
  - b. Rear
    - 1) Right \_\_\_\_\_
    - 2) Left \_\_\_\_\_
  - c. Length
    - 1) Front Take-up \_\_\_\_\_ in.
    - 2) Rear Take-up \_\_\_\_\_ in.
5. Brake Drums/Discs
  - a. Front
    - 1) Manufacturer \_\_\_\_\_
    - 2) Part Number \_\_\_\_\_
    - 3) Diameter \_\_\_\_\_ in.
  - b. Rear
    - 1) Manufacturer \_\_\_\_\_
    - 2) Part Number \_\_\_\_\_

3) Diameter \_\_\_\_\_ in.

6. Brake Lining Manufacturer \_\_\_\_\_  
Type \_\_\_\_\_

7. Brake Lining Identification \_\_\_\_\_  
a. Front \_\_\_\_\_  
1) Forward \_\_\_\_\_  
2) Reverse \_\_\_\_\_  
b. Rear \_\_\_\_\_  
1) Forward \_\_\_\_\_  
2) Reverse \_\_\_\_\_

8. Brake Linings Per shoe \_\_\_\_\_  
a. Front \_\_\_\_\_  
b. Rear \_\_\_\_\_

9. Brake Lining Widths \_\_\_\_\_  
a. Front \_\_\_\_\_ in.  
b. Rear \_\_\_\_\_ in.

10. Brake Lining Lengths \_\_\_\_\_  
a. Front \_\_\_\_\_ in.  
b. Rear \_\_\_\_\_ in.

11. Brake Lining Thickness \_\_\_\_\_ in.

12. Brake Lining Area Per Axle \_\_\_\_\_  
a. Front \_\_\_\_\_ Sq. in.  
b. Rear \_\_\_\_\_ Sq. in.

T. AIR COMPRESSOR (See 5.3.4)  
1. Manufacturer \_\_\_\_\_  
2. Type \_\_\_\_\_  
3. Rated Capacity \_\_\_\_\_ cfm  
4. Capacity, at Idle \_\_\_\_\_ cfm  
5. Capacity, at Maximum Speed \_\_\_\_\_ cfm  
6. Maximum Warranted Speed \_\_\_\_\_ rpm  
7. Speed Idle \_\_\_\_\_ rpm  
8. Drive Type \_\_\_\_\_ rpm  
9. Governor \_\_\_\_\_  
a) Cut-in Pressure \_\_\_\_\_ psi  
b) Cut-Out Pressure \_\_\_\_\_ psi

U. AIR RESERVOIR CAPACITY (See 5.3.4.)  
1. Supply Reservoir \_\_\_\_\_ Cu. in.  
2. Primary Reservoir \_\_\_\_\_ Cu. in.  
3. Secondary Reservoir \_\_\_\_\_ Cu. in.  
4. Parking Reservoir \_\_\_\_\_ Cu. in.

V. PASSENGER INTERIOR LIGHTING (See 5.4.4)  
1. Manufacturer \_\_\_\_\_  
2. Type \_\_\_\_\_  
3. Number of Fixtures \_\_\_\_\_  
4. Size of Fixtures \_\_\_\_\_  
5. Power Pack \_\_\_\_\_

W. DOORS (See 5.4.5.)  
1. Front \_\_\_\_\_  
a. Mfr. of Operating Equipment \_\_\_\_\_  
b. Type of Door \_\_\_\_\_  
c. Type of Operating Equipment \_\_\_\_\_  
2. Rear \_\_\_\_\_  
a. Mfr. of Operating Equipment \_\_\_\_\_  
b. Type door \_\_\_\_\_  
c. Type of Operating Equipment \_\_\_\_\_

X. SEATS \_\_\_\_\_



Passenger Seats (See 5.4.5.)

1. Manufacturer \_\_\_\_\_
2. Model \_\_\_\_\_

Driver's Seat (See 5.4.6)

1. Manufacturer \_\_\_\_\_
2. Model \_\_\_\_\_

Y. WHEELCHAIR RAMP EQUIPMENT (See 5.4.5.)

1. Manufacturer & Model No. \_\_\_\_\_
2. Type \_\_\_\_\_
3. Capacity \_\_\_\_\_ Lbs.
4. Dimensions
  - a. Width of Platform \_\_\_\_\_ In.
  - b. Length of Platform \_\_\_\_\_ In.

Z. WHEELCHAIR SECUREMENT EQUIPMENT (See 5.4.5)

1. Manufacturer & Model No. \_\_\_\_\_

AA. MIRRORS (See 4.6)

	Size	Type	Manufacturer	Mfg. Part #	Model No.
Right Side Exterior	_____	_____	_____	_____	_____
Left Side Exterior	_____	_____	_____	_____	_____
Left Side Exterior	_____	_____	_____	_____	_____
Center Rearview	_____	_____	_____	_____	_____
Front Entrance Area	_____	_____	_____	_____	_____
Upper-Right Hand Corner	_____	_____	_____	_____	_____
Rear Exit Area	_____	_____	_____	_____	_____

BB. PASSENGER WINDOWS (See 5.4.7)

1. Manufacturer \_\_\_\_\_
2. Model \_\_\_\_\_
3. Type \_\_\_\_\_
4. Number: (Side) \_\_\_\_\_  
(Rear) \_\_\_\_\_
5. Sizes: \_\_\_\_\_
6. Glazing: Type \_\_\_\_\_  
Thickness \_\_\_\_\_  
Color of Tint \_\_\_\_\_  
Light Transmission \_\_\_\_\_

CC. HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT (See 5.4.8)

1. Heating System Capacity \_\_\_\_\_ B.T.U.
2. Air Conditioning Capacity \_\_\_\_\_ B.T.U.
3. Ventilating Capacity \_\_\_\_\_ cfm
4. Compressor
  - a. Manufacturer & Model \_\_\_\_\_
  - b. No. of Cylinders \_\_\_\_\_
  - c. Drive Ratio \_\_\_\_\_
  - d. Max. Warranted Speed \_\_\_\_\_ r.p.m.
  - e. Operating Speed \_\_\_\_\_ r.p.m.
  - f. Weight \_\_\_\_\_ lbs.
  - g. Oil Capacity
    - 1) Dry \_\_\_\_\_ gals.
    - 2) Wet \_\_\_\_\_ gals.
  - h. Refrigerant \_\_\_\_\_ Type \_\_\_\_\_ Lbs.
5. Condenser
  - a. Manufacturer & Model \_\_\_\_\_
  - b. No. of Rows \_\_\_\_\_
  - c. No. of Fins/In. \_\_\_\_\_
  - d. O.D. of Tube \_\_\_\_\_ In.
  - e. Fin Thickness \_\_\_\_\_ In.

6. Condenser Fan
  - a. Manufacturer & Model \_\_\_\_\_
  - b. Fan Diameter \_\_\_\_\_ In.
  - c. Speed Maximum \_\_\_\_\_ RPM
  - d. Flow Rate (maximum) \_\_\_\_\_ CFM
7. Receiver
  - a. Manufacturer & Model \_\_\_\_\_
  - b. Capacity \_\_\_\_\_ Lbs.
8. Condenser Fan Drive Motors
  - a. Manufacturer \_\_\_\_\_
  - b. Model \_\_\_\_\_
  - c. Type \_\_\_\_\_
  - d. Horse Power \_\_\_\_\_ HP
  - e. Operating Speed \_\_\_\_\_ r.p.m.
9. Evaporator Fan Drive Motors
  - a. Manufacturer \_\_\_\_\_
  - b. Model \_\_\_\_\_
  - c. Type \_\_\_\_\_
  - d. Horse Power \_\_\_\_\_ HP
  - e. Operating Speed \_\_\_\_\_ r.p.m.
10. Evaporator(s)
  - a. Manufacturer & Model \_\_\_\_\_
  - b. Number of Rows \_\_\_\_\_
  - c. No. of Fins/In. \_\_\_\_\_
  - d. Outer Diameter of Tube \_\_\_\_\_ In.
  - e. Fin Thickness \_\_\_\_\_ In.
  - f. Number of Evaporator \_\_\_\_\_
11. Expansion Valve
  - a. Manufacturer & Model \_\_\_\_\_
13. Filter-Drier
  - a. Manufacturer & Model \_\_\_\_\_
14. Heater Cores
  - a. Manufacturer & Model \_\_\_\_\_
  - b. Capacity \_\_\_\_\_ B.T.U.
  - c. Number of Rows \_\_\_\_\_
  - d. Number of Fins/In. \_\_\_\_\_
  - e. Outer Diameter of Tube \_\_\_\_\_ In.
  - f. Fin Thickness \_\_\_\_\_ In.
  - g. Number of Heater Cores \_\_\_\_\_
15. Controls
  - a. Manufacturer & Model \_\_\_\_\_
  - b. Type \_\_\_\_\_
16. Driver's Heater
  - a. Manufacturer \_\_\_\_\_
  - b. Model No. \_\_\_\_\_
  - c. Capacity \_\_\_\_\_ B.T.U.
17. Ventilation System
  - a. Type \_\_\_\_\_
18. Coolant Heater
  - a. Make & Model \_\_\_\_\_
  - b. Capacity(B.T.U) \_\_\_\_\_

DD. DESTINATION SIGNS (See 5.4.9)

1. Manufacturer \_\_\_\_\_
2. Type \_\_\_\_\_
3. Character Length
  - Front Destination \_\_\_\_\_ In.
  - Front Run Number \_\_\_\_\_ In.
  - Side Destination \_\_\_\_\_ In.
  - Rear Route \_\_\_\_\_ In.
4. Character Height \_\_\_\_\_

- Front Destination \_\_\_\_\_ In.  
 Front Run Number \_\_\_\_\_ In.  
 Side Destination \_\_\_\_\_ In.  
 Rear Route \_\_\_\_\_ In.  
 5. Number of Characters \_\_\_\_\_  
 Front Destination \_\_\_\_\_ In.  
 Front Run Number \_\_\_\_\_ In.  
 Side Destination \_\_\_\_\_ In.  
 Rear Route \_\_\_\_\_ In.  
 Rear \_\_\_\_\_ In.  
 6. Message Width \_\_\_\_\_  
 Front Destination \_\_\_\_\_ In.  
 Front Run Number \_\_\_\_\_ In.  
 Side Destination \_\_\_\_\_ In.  
 Rear Route \_\_\_\_\_ In.

EE. COMMUNICATION SYSTEM - GPS (See 5.4.9)

1. Manufacturer \_\_\_\_\_  
 2. Model No. \_\_\_\_\_

FF. P.A. System (See 4.9)

- |    |               | Manufacturer | Model No.      |
|----|---------------|--------------|----------------|
| 1. | Amplifier     | _____        | _____          |
| 2. | Microphone    | _____        | _____          |
| 3. | Int. Speakers | _____        | (number _____) |
| 4. | Ext. Speaker  | _____        | (number _____) |

GG. ELECTRICAL (See 5.5.1)

1. Multiplex System  
 a. Manufacturer \_\_\_\_\_  
 b. Model No. \_\_\_\_\_  
 2. Batteries (See 5.5.3)  
 a. Manufacturer \_\_\_\_\_  
 b. Model No. \_\_\_\_\_  
 c. Type \_\_\_\_\_

HH. PAINT

- Exterior Paint (5.4.3)  
 a. Manufacturer \_\_\_\_\_  
 b. Paint Code No. \_\_\_\_\_  
 c. Warranty: \_\_\_\_\_

## **FEDERAL AND STATE REQUIREMENTS**

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### **1. General**

The work performed under this contract will be financed, in part, by grants provided under programs of the Federal Transit Administration. Citations to federal law, regulation, and guidance references include, but are not limited to, the Master Agreement FTA MA (19), dated October 1, 2012; FTA Circular 4220.1F, dated November 1, 2008; "Best Practices Procurement Manual", updated March 13, 1999 with revisions through October 2005; 49 CFR Part 18 (State and Local Governments) and 49 CFR Part 19 (Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations) and any subsequent amendments or revisions thereto.

THE FOLLOWING MAY BE USED SYNONYMOUSLY:  
"BIDDER" AND "CONTRACTOR"  
"PURCHASER", "PROCURING AGENCY" AND "OWNER"

### **2. Federal Changes**

Contractor shall at all times comply with all applicable Federal Transit Administration (FTA) regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Master Agreement between Purchaser and FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to comply shall constitute a material breach of this contract.

### **3. Notification of Federal Participation**

To the extent required by Federal law, the State of North Carolina agrees that, in administering any Federal assistance Program or Project supported by the underlying Grant Agreement or Cooperative Agreement, any request for proposals, solicitation, grant application, form, notification, press release, or other publication involving the distribution of FTA assistance for the Program or the Project that it will identify the FTA grant source by listing the Catalog of Federal Domestic Assistance Number of the program. The following FTA grant programs will be eligible to participate in this bid, 20.505, 20.507, 20.500, 20.513, 20.509, 20.516, and 20.521. Federal funding assistance up to eighty (80%) percent may be provided.

### **4. Definitions**

Third Party Agreement, in accordance with the Master Agreement unless FTA determines otherwise in writing, includes all of the following agreements, such as:

- (1) Third party contracts,
- (2) Leases,
- (3) Third party subcontracts; and
- (4) Other similar arrangements or agreements.

Third Party Participant, in accordance with the Master Agreement unless FTA determines otherwise in writing, includes all of the following participants, such as:

- (1) Third party contractors,
- (2) Lessees,
- (3) Third party subcontractors, and
- (4) Other participants in the Project

### **5. Conflict of Interest**

No employee, officer, board member, or agent of the Owner shall participate in the selection, award, or administration of a contract supported by Federal Transit Administration (FTA) funds if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when the employee, officer, board member, or agent, any member of his or her immediate family, his or her partner, or an organization that employs, or is about to employ any of the above, has a financial or other interest in the firm selected for award.

6. Lobbying

Byrd Anti-Lobbying Amendment, 31 U.S.C. 1352, as amended by the Lobbying Disclosure Act of 1995, PL 104-65 (2 U.S.C. §1601, et seq.). Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any Procuring Agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall comply with Federal statutory provisions to the extent applicable prohibiting the use of Federal assistance funds for activities designed to influence congress to a State legislature on legislation or appropriations, except through proper official channels. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

The requisite "Lobbying Certification" is included as ATTACHMENT A (attach Standard Form-LLL if necessary) and must be executed for contracts of \$100,000 or more and prior to the award of the contract.

7. Civil Rights

(1) Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6101 et seq., section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

(a) The third party contractor and all lower tiers shall comply with all provisions of FTA Circular 4701.1A, "Title VI and Title VI Dependent Guidelines for Federal Transit Administration recipients", May 13, 2007.

(2) Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying contract:

(a) Race, Color, Religion, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, Title VI of the Civil Rights Act, 28 C.F.R. § 50.3, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, national origin, sex, disability, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(b) Equal Employment Opportunity Requirements for Construction Activities. For activities determined by the U.S. Department of Labor (U.S. DOL) to qualify as "construction," the Contractor agrees to comply and assures the compliance of each subcontractor at any tier of the Project, with all applicable equal employment opportunity requirements of U.S. DOL regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order No. 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000(e) note, and also with any Federal laws, regulations, and directives affecting construction undertaken as part of the Project.

(3) Nondiscrimination on the Basis of Age – The Contractor agrees to comply with all applicable requirements of the Age Discrimination Act of 1975, as amended, 42 U.S.C. §§ 6101 et seq., and with implementing U.S. Health and Human Services regulations, "Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance, 45 C.F.R. Part 90, which prohibit discrimination against individuals on the basis of age.

The Age Discrimination in Employment Act (ADEA) 29 U.S.C. §§ 621 through 634 and with implementing U.S. Equal Employment Opportunity Commission (U.S. EEOC) regulations, "Age Discrimination in Employment Act," 29 C.F.R. Part 1625, which prohibits discrimination against individuals on the basis of age.

(4) Nondiscrimination on the Basis of Sex - The Contractor agrees to comply with all applicable requirements of Title IX of the Education Amendments of 1972, as amended, 20 U.S.C. §§ 1681 et seq., and with implementing U.S. DOT regulations, "Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance," 49 C.F.R. Part 25, that prohibit discrimination on the basis of sex.

(5) Access for Individuals with Disabilities - The Contractor agrees to comply with 49 U.S.C. § 5301(d), which states the Federal policy that elderly individuals and individuals with disabilities have the same right as other individuals to use public transportation services and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement transportation accessibility rights for elderly individuals and individuals with disabilities. The Contractor also agrees to comply with all applicable provisions of section 504 of the Rehabilitation Act of 1973, as amended, with 29 U.S.C. § 794, which prohibits discrimination on the basis of disability; with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 et seq., which requires that accessible facilities and services be made available to individuals with disabilities; and with the Architectural Barriers Act of 1968, as amended, 42 U.S.C. §§ 4151 et seq., which requires that buildings and public accommodations be accessible to individuals with disabilities. In addition, the Contractor agrees to comply with applicable Federal regulations and directives and any subsequent amendments thereto, except to the extent the Federal Government determines otherwise in writing, as follows:

- (1) U.S. DOT regulations "Transportation Services for Individuals with Disabilities (ADA)" 49 C.F.R. Part 37;
- (2) U.S. DOT regulations "Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance," 49 C.F.R. Part 27;
- (3) Joint U.S. Architectural and Transportation Barriers Compliance Board (U.S. ATBCB) U.S. DOT regulations, "Americans with Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 C.F.R. Part 1192 and 49 C.F.R. Part 38;
- (4) U.S. DOJ regulations "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35;
- (5) U.S. DOJ regulations "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36;
- (6) U.S. GSA regulations "Accommodations for the Physically Handicapped," 41 C.F.R. Subpart 101-19;
- (7) U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630;
- (8) U.S. Federal Communications Commission regulations "Telecommunications Relay Services and Related Customer Premises Equipment for the Hearing and Speech Disabled," 49 C.F.R. Part 64, Subpart F;
- (9) U.S. Architectural and Transportation Barriers Compliance Board regulations, "Electronic and Information Technology Accessibility Standards," 36 C.F.R. Part 1194;
- (10) FTA regulations, "Transportation of Elderly and Handicapped Persons," 49 C.F.R. part 609; and

Federal civil rights and nondiscrimination directives implementing the foregoing Federal laws and regulations, except to the extent the Federal Government determines otherwise in writing.

(6) Access to Services for Persons with Limited English Proficiency. The Contractor agrees to comply with Executive Order No. 13166, "Improving Access to Services for Persons with Limited English Proficiency," 42 U.S.C. § 2000d-1 note, and U.S. DOT Notice, "DOT Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficiency (LEP) Persons," 70 Fed. Reg. 74087, December 14, 2005, except to the extent that the Federal Government determines otherwise in writing.

(7) DOT Order 5610.2. The Contractor agrees to comply with the policies of Executive Order No. 12898, "Federal Actions to Address Environmental Justice Minority Populations and Low-Income Populations," 42 U.S.C. § 4321 note; and DOT Order 5610.2, "Department of Transportation Actions To Address Environmental Justice in Minority Populations and Low-

Income Populations," 62 Fed. Reg. 18377 et seq., April 15, 1997, except to the extent that the Federal Government determines otherwise in writing.

(8) Drug or Alcohol Abuse-Confidentiality and Other Civil Rights Protections. To the extent applicable, the Contractor agrees to comply with the confidentiality and other civil rights protections of the Drug Abuse Office and Treatment Act of 1972, as amended, 21 U.S.C. §§ 1101 et seq., with the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970, as amended, 42 U.S.C. §§ 4541 et seq., and with the Public Health Service Act of 1912, as amended, 42 U.S.C. §§ 290dd through 290dd-2, and any amendments thereto.

(9) Other Nondiscrimination Laws. The Contractor agrees to comply with applicable provisions of other Federal laws and regulations, and follow applicable directives prohibiting discrimination, except to the extent that the Federal Government determines otherwise in writing.

(10) The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

#### 8. Disadvantaged Business Enterprises

Pursuant to 49 CFR 26.49, the Contractor, as a condition of being authorized to respond to this solicitation, must certify that it has filed with the Federal Transit Administration (FTA) an approved or not disapproved annual Disadvantaged Business Enterprise (DBE) subcontracting participation goal.

The requisite "Transit Vehicle Manufacturer's Certification" is included as ATTACHMENT B and MUST be completed and executed for ALL contracts and submitted with the bid or quote.

A bid OR QUOTE that is submitted without the CERTIFICATION will not be considered for award.

#### 9. Clean Air Act

The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to Section 306 of the Clean Air Act as amended, 42 U.S.C. § 7606, and other applicable provisions of the Clean Air Act, as amended, 42 U.S.C. §§ 7401 through 7671q. The Contractor agrees to report any violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to the State and/or FTA and the appropriate EPA Regional Office.

(b) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal Assistance provided by FTA.

#### 10. Clean Water

(a) The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to Section 508 of the Clean Water Act, as amended, 33 U.S.C. § 1368, and other applicable requirements of the Clean Water Act, as amended, 33 U.S.C. §§ 1251 through 1377. The Contractor agrees to report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(b) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

#### 11. Environmental Protection

The Contractor agrees to comply with all applicable requirements of the National Environmental Policy Act of 1969, as amended, (NEPA) 42 U.S.C. §§ 4321 through 4335 (as restricted by 42 U.S.C. § 5159, if applicable); Executive Order No. 11514, as amended, "Protection and Enhancement of Environmental Quality," 42 U.S.C. § 4321 note; FTA statutory requirements at 49 U.S.C. § 5324(b); U.S. Council on Environmental Quality regulations pertaining to compliance with NEPA, 40 C.F.R. Parts 1500 through 1508; and joint FHWA/FTA regulations, "Environmental Impact and Related Procedures," 23 C.F.R. Part 771 and 49 C.F.R. Part 622; and other applicable Federal environmental protection regulations that may be promulgated at a later date. The Contractor agrees to comply with the applicable provisions of 23 U.S.C. § 139 pertaining to environmental procedures, and 23 U.S.C. § 326, pertaining to Purchaser's responsibility for categorical exclusions, in accordance with the provisions of joint FHWA/FTA final guidance, "SAFETEA-LU Environmental Review Process (Public Law 109-59)," 71 Fed. Reg. 66576 et seq. November 15, 2006 and any applicable Federal directives that may be issued at a later date, except to the extent that FTA determines otherwise in writing.

## 12. Energy Conservation

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plans issued in compliance with the Energy Policy and Conservation Act, 42 U.S.C. Sect. 6321 et seq.

## 13. Cargo Preference

46 U.S.C. 55305 and 46 CFR Part 381 impose cargo preference requirements in contracts and subcontracts in which equipment, materials or commodities may be transported by ocean vessel in carrying out the project. If the Contractor has knowledge of or anticipates any equipment, materials or commodities that may be shipped by ocean vessel, the Contractor is obligated to inform the Owner, so that additional requirements and clauses may be attached to this Contract.

## 14. Buy America

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 CFR Part 661, to the extent those regulations are consistent with SAFETEA-LU provisions, and subsequent amendments to those regulations that may be promulgated. The Contractor also agrees to comply with FTA directives to the extent those directives are consistent with SAFETEA-LU provisions, except to the extent that FTA determines otherwise in writing. Buy America requirements state that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waiver requirements are listed in 49 CFR 661.7. Appendix A grants a general public interest waiver from the Buy America requirements that apply to microprocessors, computers, microcomputers, or software, or other such devices, which are used solely for the purpose of processing or storing data. This general waiver does not extend to a product or device, which merely contains a microprocessor or microcomputer and is not used solely for the purpose of processing or storing data. Small purchases (currently less than \$100,000) made with capital, operating, or planning funds are also exempt from the Buy America requirements.

The Buy America requirements flow down from FTA recipients and subrecipients to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

Separate requirements for rolling stock are set out at 5323(j)(2)(C) and 49 CFR 661.11, which provide that Federal funds may not be obligated unless rolling stock is manufactured in the United States and have a sixty (60%) percent domestic content. Rolling stock that is not subject to a general waiver must be manufactured in the United States and have a 60 percent domestic content. Rolling stock includes: buses, other vehicles used in transportation, train control equipment, communication equipment, and traction power equipment.

Effective July 24, 1995 small purchases (under the \$100,000 threshold) made with FTA funds, will not be subject to the Buy America requirement. The value of small purchases should be determined by using "contract price" and not "unit price".

These regulations require, as a matter of responsiveness, that the Bidder or Contractor submit to the purchaser the appropriate Buy America certification (Attachment C or D) with all bids where FTA funds are provided, except those subject to a general waiver or less than \$100,000.

Bids or offers that are submitted without the completed Buy America Certification must be rejected as nonresponsive. BIDDERS ARE ADVISED THAT SUBMISSION OF BOTH CERTIFICATIONS WITH THE BID IS ALSO CONSIDERED NONRESPONSIVE AND WILL RESULT IN REJECTION OF THE BID; ONLY ONE CERTIFICATION (either C or D) SHALL BE SUBMITTED.

## 15. Fly America

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and subrecipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance



with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

#### 16. Debarment and Suspensions

This contract is a covered transaction for purposes of 2 CFR Part 1200, which adopts and supplements the provisions of U.S. Office of Management and Budget (U.S. OMB) "Guidelines to Agencies on Government wide Debarment and Suspension (Nonprocurement)," 2 CFR Part 180. As such, the contractor is required to verify that none of the contractor, its principals, as defined at 2 CFR 180.995, or affiliates, as defined at 2 CFR 180.905, are excluded or disqualified as defined at 2 CFR 180.940, 180.935 and 180.945.

The contractor is required to comply with 2 CFR 180, Subpart C and must include the requirement to comply with 2 CFR 180, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the Procuring Agency. If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to Procuring Agency, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 CFR 180, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

The Procuring Agency agrees and assures that its third party contractors and lessees will review the "Excluded Parties Listing System" at <https://www.sam.gov> before entering into any subagreement, lease or third party contract.

The Procuring Agency will be reviewing all third party contractors under the Excluded Parties Listing System at <https://www.sam.gov> before entering into any contracts.

The requisite Debarment and Suspension Certification is included as ATTACHMENT E (attach additional statement if necessary) and must be executed for contracts of \$25,000 or more and prior to the award of the contract.

#### 17. Pre-Award and Post-Delivery Audits of Rolling Stock Purchases

49 U.S.C. Section 5323(m) and FTA's implementing regulation 49 CFR Part 663, dated September 24, 1991, and, when promulgated, any amendments to those regulations, require all recipients purchasing vehicles carrying passengers to conduct pre-award and post-delivery audits. If the provisions of 49 U.S.C. Section 5323(m), as amended by SAFETEA-LU conflict with FTA's implementing regulations as currently promulgated the provisions of 49 U.S.C. Section 5323(m), as amended, prevail.

##### Pre-Award Audit:

The two lowest bidders, determined at bid opening, will be required to submit the following information within three working days of the Purchaser's request. Pre-award information may also be submitted with the bid.

(1) Buy America Requirements: (for contracts of \$100,000 and more)

The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America (see Section 14. Buy America). If the Contractor certifies compliance with Buy America, it shall provide supporting documentation that indicates that 60% of the cost of all components are manufactured in the United States and that final assembly takes place in the United States. The documentation shall include:

- a) the component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs;
- b) the location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of the final assembly; and
- c) a copy of the letter from FTA granting a waiver on the vehicle(s) for all or part of the Buy America requirement under section 165(b)(1), (b)(2), or (b)(4) of the Surface Transportation Assistance Act (STAA) of 1982, as amended;

(2) Federal Motor Vehicle Safety Standards (FMVSS) Certification: (must be completed for all purchases)

The Contractor shall submit:

- a) The manufacturer's FMVSS self-certification sticker information that the vehicle complies with relevant FMVSS regulations; or

b) The manufacturer's certified statement that the contracted vehicles will not be subject to the FMVSS regulations.

(3) Solicitation Specification Requirements:  
The Contractor shall submit evidence that it will be capable of meeting the bid specifications.

**Post-Delivery Audit:**

Upon completion of the vehicle(s), and prior to filing of the title, the successful bidder shall provide the information indicated in 1-3 above. This post-delivery audit is required to ensure that the vehicle(s) were manufactured as intended. Failure to comply with this requirement or inability to certify Buy America compliance shall be cause for rejection of the vehicle(s).

Upon delivery and acceptance of the equipment, the vehicle(s) shall undergo a thorough visual inspection and road test to assure compliance to contract specifications.

\*Note - The term "manufacturer" shall include, but not be limited to, the chassis manufacturer; the secondary manufacturer; a second party providing additions or modifications to the vehicle, and/or the bidder.

Please refer to technical sheets regarding computation of component and subcomponent parts.

The two lowest bidders, determined at bid opening, will be required to submit the Pre-Audit information within three (3) working days of the Purchaser's request. This information may also be submitted with the bid. This pre-award audit information is required to be eligible for award of the bid. Failure to comply with this requirement shall be cause for rejection of the bid.

**18. Geographic Preference**

Procurements shall be conducted in a manner that prohibits the use of statutorily or administratively imposed in-State or local geographical preferences in evaluation or award of bids or proposals, except where applicable Federal statutes expressly mandate or encourage geographic preference. This does not preempt State licensing laws.

**19. Termination or Cancellation of Contract**

Termination or cancellation of the contract, in whole or in part, may be determined by the project if it is in the best interest of the project. A notice of termination shall be delivered to the Contractor, specifying the extent to which performance of work under the contract is terminated, and the date upon which such termination becomes effective. The Contractor shall be paid for work that has been performed and completed up to the time of termination. The Contractor shall promptly submit its termination claim to be paid. A 30 day notice of termination shall be required.

**20. Breach of Contract**

If the Contractor fails to make delivery of the equipment, supplies, or services within the specified terms of the contract, or fails to perform within the provisions of the contract, the contract may be terminated by reason of default or breach. A written notice of default or breach of contract shall be presented to the Contractor within three (3) working days of such failure. The Contractor will only be paid the contract price for equipment, supplies, or services delivered and accepted in accordance with the requirements set forth in the contract.

If it is determined that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the Owner, after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

The Owner in its sole discretion may, in the case of breach of contract, allow the Contractor a specified period of time in which to correct the defect. In such case, the notice of termination will state the time period in which the correction is permitted and other appropriate conditions.

If Contractor fails to remedy to the Owner's satisfaction the breach or default or any of the terms, covenants, or conditions of this contract within twenty (20) days after written notice from the Owner setting forth the nature of said breach or default, the Owner shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude the Owner from also pursuing all available remedies against Contractor and its sureties for said breach or default.

## 21. Resolution of Disputes

Disputes - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the Owner. This decision shall be final and conclusive unless within ten (10) days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the authorized representative of the Owner. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the authorized representative of the Owner shall be binding upon the Contractor and the Contractor shall abide by the decision.

Performance During Dispute - Unless otherwise directed by the Owner, the Contractor shall continue performance under this Contract while matters in dispute are being resolved.

Claims for Damages - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

Remedies - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the Owner and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the Owner is located.

Rights and Remedies - The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

## 22. Protest Procedures

To ensure that protests are received and processed effectively the Purchaser shall provide written bid protest procedures upon request. In all instances information regarding the protest shall be disclosed to the N.C. Department of Transportation (NCDOT). All protest requests and decisions must be in writing. A protester must exhaust all administrative remedies with the Purchaser before pursuing remedies through the NCDOT. Reviews of protests by the NCDOT will be limited to the Purchaser's failure to have or follow its protest procedures, or its failure to review a complaint or protest. An appeal to the NCDOT must be received by the Department within three (3) working days of the date the protester knew or should have known of the violation. An appeal to FTA must be received by the cognizant FTA regional or Headquarters Office within five (5) working days of the date the protester knew or should have known of the violation. Violations of Federal law or regulation will be handled by the complaint process stated within that law or regulation. Violations of State or local law or regulations will be under the jurisdiction of State or local authorities.

## 23. Nonconstruction Employee Protection Requirements

Section 102 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 3701 et seq., in particular the wage and hour requirements of section 102 of that Act at 40 U.S.C. § 3702, and with U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5.

(1) Overtime requirements - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2) Violation; liability for unpaid wages; liquidated damages - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such

liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$ 10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) Withholding for unpaid wages and liquidated damages - The Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts - The contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

(5) Payrolls and basic records - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

#### 24. No Federal Government Obligations to Third Parties

(1) The Purchaser and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the Purchaser, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions

#### 25. Program Fraud and False or Fraudulent Statements and Related Acts

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, certification, or agreement with or to the Federal Government involving a project authorized by 49 U.S.C. chapter 53 or any other Federal law, the Federal Government reserves the right to impose on the Contractor the penalties of 49 U.S.C. 5323(l), 18 U.S.C. § 1001 or other applicable Federal law to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

#### 26. Access to Records and Reports

The Contractor agrees to permit, and require its subcontractors to permit, the U.S. Secretary of Transportation, and the Comptroller General of the United States, and, to the extent appropriate, the State, or their authorized representatives, upon their request to inspect all Project work, materials, payrolls, invoices, and other data, and to audit the books, records, and accounts of the Contractor and its subcontractors pertaining to the Project, as required by 49 U.S.C. § 5325(g).

Contractor also agrees, pursuant to 49 C.F.R. 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S. D. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5303, 5307, 5309, 5310, 5311, 5316, or 5317.

The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The State of North Carolina, Office of the State Auditor, now requires that all records now be retained for five (5) years after that date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the Purchaser, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives have disposed of all such litigation, appeals, claims or exceptions related thereto.

#### 27. Bus Testing Program

The Contractor [Manufacturer] agrees to comply with 49 U.S.C. A 5323(c) and FTA's implementing regulation at 49 CFR Part 665 and shall perform the following:

- 1) A manufacturer of a new bus model or a bus produced with a major change in components or configuration shall provide a copy of the final test report to the recipient at a point in the procurement process specified by the recipient which will be prior to the recipient's final acceptance of the first vehicle.
- 2) A manufacturer who releases a report under paragraph 1 above shall provide notice to the operator of the testing facility that the report is available to the public.
- 3) If the manufacturer represents that the vehicle was previously tested, the vehicle being sold should have the identical configuration and major components as the vehicle in the test report, which must be provided to the recipient prior to recipient's final acceptance of the first vehicle. If the configuration or components are not identical, the manufacturer shall provide a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.
- 4) If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

The Bus Testing Certification is included as ATTACHMENT F and must be executed for ALL contracts prior to the award of the contract.

#### 28. State and Local Disclaimer

The use of many of the suggested clauses are not governed by Federal law, but are significantly affected by State law. The language of the suggested clauses may need to be modified depending on state law, and that before the suggested clauses are used in the grantees procurement documents, the grantees should consult with their local attorney.

#### 29. Incorporation of Federal Transit Administration (FTA) Terms

The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F, dated November 1, 2008, and are hereby incorporated by reference. Anything to the contrary herein

notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any (name of grantee) requests which would cause (name of grantee) to be in violation of the FTA terms and conditions.

### 30. Hold Harmless

Except as prohibited or otherwise limited by State law, the Contractor agrees to indemnify, save, and hold harmless the Purchaser/Owner of this Purchase Contract and its officers, agents, and employees acting within the scope of their official duties against any liability, including all claims, losses, costs and expenses accruing or resulting to any other person, firm, or corporation furnishing or supplying work, services, materials, or supplies in connection with the performance of this contract, and from any and all claims and losses accruing or resulting to any person, firm, or corporation that may be injured or damaged by the contractor or subcontractor in the performance of this contract and that are attributable to the negligence or intentionally tortuous acts of the contractor.

The Contractor represents and warrants that it shall make no claim of any kind or nature against the Purchaser or its agents who are involved in the delivery or processing of contractor goods to the Purchaser. The representation and warranty in the preceding sentence shall survive the termination or expiration of this contract.

### 31. Safe Operation of Motor Vehicles

#### a. Seat Belt Use.

Pursuant to Executive Order No. 13043, April 16, 1997, 23 U. S. C. § 402, the Contractor is encouraged to adopt and promote on-the-job seat belt use policies and programs for its employees and other personnel that operate company-owned, rented, or personally-operated vehicles and include this provision in any third party subcontracts, leases or similar documents in connection with this project.

#### b. Distracted Driving, Including Texting While Driving.

Consistent with Executive Order No. 13513, "Federal Leadership on Reducing Text Messaging While Driving," October 1, 2009, 23 U.S.C. Section 402 note, and DOT Order 3902.10, "Text Messaging While Driving," December 30, 2009, FTA encourages each third party contractor to promote policies and initiatives for its employees and other personnel that adopt and promote safety policies to decrease crashes by distracted drivers, including policies to ban text messaging while driving, and to include this provision in any third party subcontract leases or similar documents in connection with this project.

#### c. Safety. The Contractor is encouraged to:

(1) Adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers including policies to ban text messaging while driving—

Company-owned or rented vehicles; Privately-owned vehicles when on official Project related business or when performing any work for or on behalf of the Project; or any vehicle, on or off duty, and using an electronic device.

(2) Education, awareness, and other outreach to employees about the safety risks associated with texting while driving.

#### d. Definitions

(1) "Driving" means operating a motor vehicle on a roadway, including while temporarily stationary because of traffic, a traffic light, stop sign, or otherwise. "Driving" does not include being in your vehicle (with or without the motor running) in a location off the roadway where it is safe and legal to remain stationary.

(2) "Text Messaging" means reading from or entering data into any handheld or other electronic device, including for the purpose of short message service texting, e-mailing, instant messaging, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic data communication. The term does not include the use of a cell phone or other electronic device for the limited purpose of entering a telephone number to make an outgoing call or answer an incoming call, unless the practice is prohibited by State or local law.

### 32. Exclusionary or Discriminatory Specifications

The Contractor agrees that it will comply with the requirements of 49 U.S.C. Sect. 5325(h) by refraining from using any funds derived from FTA in performance of this Contract to support procurements using exclusionary or discriminatory specifications.

### 33. Metric System

To the extent required by U.S. DOT or FTA, the Contractor agrees to use the metric system of measurement in its Contract activities as may be required by 49 U.S.C. Sect. 205a et seq.; Executive Order No. 12770, "Metric Usage in Federal Government Programs," 15 U.S.C. Sect. 205a; and other regulations, guidelines and policies issued by U.S. DOT or FTA. To the extent practicable and feasible, the Contractor agrees to accept products and services with dimensions expressed in the metric system of measurement.

### 34. North Carolina State Ethic's Requirement

Pursuant to Governor Perdue's Executive Order # 24, this section should be included in the terms and conditions of all contracts let by the Governor's Cabinet Agencies and the Office of the Governor:

1) "By Executive Order 24, issued by Governor Perdue, and N.C. G.S. § 133-32, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's Cabinet Agencies (i.e., Administration, Commerce, Correction, Crime Control and Public Safety, Cultural Resources, Environment and Natural Resources, Health and Human Services, Juvenile Justice and Delinquency Prevention, Revenue, Transportation, and the Office of the Governor). This prohibition covers those vendors and contractors who:

- (1) have a contract with a governmental agency; or
- (2) have performed under such a contract within the past year; or
- (3) anticipate bidding on such a contract in the future.

For additional information regarding the specific requirements and exemptions, vendors and contractors are encouraged to review Executive Order 24 and G.S. Sec. 133-32.

Executive Order 24 also encouraged and invited other State Agencies to implement the requirements and prohibitions of the Executive Order to their agencies. Vendors and contractors should contact other State Agencies to determine if those agencies have adopted Executive Order 24."

To be added near the signature portion of all contracts let by the Governor's Cabinet Agencies and the Office of the Governor:

"N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization."

### 35. Sensitive Security Information

Each third party contractor must protect, and take measures to ensure that its subcontractors at each tier protect, "sensitive security information" made available during the administration of a third party contract or subcontract to ensure compliance with 49 U.S.C. Section 40119(b) and implementing DOT regulations, "Protection of Sensitive Security Information," 49 CFR Part 15, and with 49 U.S.C. Section 114(r) and implementing Department of Homeland Security regulations, "Protection of Sensitive Security Information," 49 CFR Part 1520.

## PRE AWARD AND POST DELIVERY AUDIT REQUIREMENTS

Component Cost requirements of the manufacturer to meet Buy America:

The cost of components that are produced in the US (domestic) must be more than 60% of the cost of all the components of a vehicle and final assembly takes place in the US.

For a component to be domestic, more than 60% of the subcomponents cost must be of domestic origin and manufacture of component must be in US

Level of documentation of costs required must comply with 661.11(o)(1):

The cost of a component or a subcomponent is the price that a bidder or contractor must pay to a subcontractor or supplier for that component or subcomponent.

The cost used in the computation of domestic content may include appropriate fully allocated costs of the component or subcomponent, which would include overhead and profit allocation.

Costs may be presented in percentage form or dollar amount.

Domestic Content Example

Item	Total Cost of Components	Percent/Domestic
One bus (ABC Mfr.)	\$100	At least 60% of total cost
60% Domestic Component		
Component	Domestic content	
1. Engine (X Co.)	\$30 (30% of total component cost)	
2. Transmission (Y Co.)	\$20 (20% of total component cost)	
3. Wheels (Z Co.)	\$15 (15% of total component cost)	
Subtotal	\$65 (65% of total component cost) (5% more than required; no further components need be identified)	

Breakdown of components for domestic sub-component content

Sub-component	Domestic content
1. Engine (total cost \$30)	
a) Valves (A Co.)	\$12.00 (40% of cost of engine)
b) Block (B Co.)	\$10.50 (35% of cost of engine)
Subtotal	\$22.50 (75% of cost of engine) (15% more than required; no further sub-components need be identified)
2. Transmission (total cost \$20)	
a) Gears (C Co.)	\$ 4.00 (20% of cost of trans.)
b) Housing (D Co.)	\$ 8.00 (40% of cost of trans.)
Subtotal	\$12.00 (60% of cost of trans.) (minimum percent achieved; no further sub-components need be identified)
3. Wheels (total cost \$15)	
a) Castings (F Co.)	\$10.00 (66.7% of cost of wheels)
Subtotal	\$10.00 (66.7% of cost of wheels) (6.7% more than required; no further sub-components need be identified)



## ATTACHMENT A

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### CERTIFICATION REGARDING LOBBYING

(To be submitted with all bids exceeding \$100,000.)

The undersigned \_\_\_\_\_ certifies, to the best of his or her knowledge and belief, that:  
(Contractor)

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any persons for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding to any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (PL 104-65, to be codified at 2 U.S.C. 1601, et seq.)]

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transactions imposed by 31, U.S.C. 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 for each such expenditure or failure.]

The Contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Section A 3801 et seq., apply to this certification and disclosure, if any.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractors Authorized Official

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, in the State of \_\_\_\_\_;  
and the County of \_\_\_\_\_.

Notary Public \_\_\_\_\_

My Appointment Expires: \_\_\_\_\_

## ATTACHMENT B

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### TRANSIT VEHICLE MANUFACTURERS CERTIFICATION OF COMPLIANCE WITH 49 CFR PART 26.49

(To be submitted with all bids. A bid, which does not include this certification, will not be eligible for award.)

This procurement is subject to the provisions of 49 CFR, Part 26.49. Accordingly, as a condition of permission to bid, the following certification must be completed and submitted with the bid.

#### TRANSIT VEHICLE MANUFACTURER CERTIFICATION

\_\_\_\_\_, a TVM, hereby certifies that it has complied with the requirement of  
(Name of Manufacturer)  
49 CFR Part 26.49 by submitting a current annual DBE goal to FTA. The goals apply to Federal Fiscal Year \_\_\_\_\_, October  
1, \_\_\_\_\_ to September 30, \_\_\_\_\_ and have been approved or not disapproved by FTA.

OR

\_\_\_\_\_, hereby certifies that the Manufacturer of the transit vehicle to  
(Name of Dealer/Distributor)  
be supplied, \_\_\_\_\_, has complied with the above-referenced  
(Name of Manufacturer)  
requirement of 49 CFR Part 26.49.

DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public \_\_\_\_\_

My Appointment Expires \_\_\_\_\_

## ATTACHMENT C

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### CERTIFICATE OF COMPLIANCE WITH BUY AMERICA ROLLING STOCK REQUIREMENTS

(To be submitted with all bids exceeding \$100,000. A bid, which does not include this certification or the certification under Attachment D, will not be eligible for award.)

The bidder hereby certifies that it will comply with the requirements of 49 U.S.C. Section 5323(j), and the regulations in 49 CFR Part 661.11.

DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Notary Public \_\_\_\_\_

My Appointment Expires: \_\_\_\_\_

## ATTACHMENT D

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### **CERTIFICATE OF NON-COMPLIANCE WITH BUY AMERICA ROLLING STOCK REQUIREMENTS**

(To be submitted with all bids exceeding \$100,000. A bid, which does not include this certification or the certification under Attachment C, will not be eligible for award.)

The bidder hereby certifies that it cannot comply with the requirements of 49 U.S.C. Section 5323(j), but may qualify for an exception to the requirement consistent with 49 U.S.C. Section 5323(j)(2)(C), and regulations in 49 CFR 661.7.

DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Notary Public \_\_\_\_\_

My Appointment Expires \_\_\_\_\_

## ATTACHMENT E

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### **CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY and VOLUNTARY EXCLUSION LOWER TIER COVERED TRANSACTION**

(To be submitted with all bids exceeding \$25,000.)

The prospective lower tier participant (Bidder/Contractor) certifies, by submission of this bid or proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

The prospective Bidder/Contractor also certifies by submission of this bid or proposal that all subcontractors and suppliers (this requirement flows down to all subcontracts at all levels) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

Where the prospective lower tier participant (Bidder/Contractor) is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid or proposal.

The lower tier participant (Bidder/Contractor), \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of this statement of its certification and disclosure, if any.

DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_

COMPANY \_\_\_\_\_

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Notary Public \_\_\_\_\_

My Appointment Expires \_\_\_\_\_

## ATTACHMENT F

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### CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS

(To be submitted with all bids.)

The undersigned certifies that the vehicles offered in this procurement comply and will, when delivered, comply with 49 U.S.C. § 5323(c) and FTA's implementing regulation at 49 CFR Part 665, and any amendments thereto, according to one of the following three alternatives.

(Indicate with an "X" only one of the following statements.)

1. ☐ The vehicles offered herewith have been tested in accordance with 49 CFR Part 665 on \_\_\_\_\_ (date). The vehicles being sold should have the identical configuration and major components as the vehicle in the test report, which must be submitted with this Bid. If the configuration or components are not identical, the manufacturer shall provide with its Bid a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.
  2. ☐ The vehicles offered are a new model, or with a major change in configuration or components to be acquired, and will be tested and the full bus testing report(s) and any applicable partial testing report(s) will be submitted to the Purchaser before final acceptance of the first vehicle.
  3. ☐ The manufacturer represents that the vehicles offered are "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), and submits with this Bid the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.
  4. ☐ The manufacturer represents that the vehicles offered are not required to be bus tested.
- The undersigned understands that misrepresenting the testing status of a vehicle acquired with Federal financial assistance may subject the undersigned to civil penalties as outlined in the Department of Transportation's regulation on Program Fraud Civil Remedies, 49 CFR Part 31. In addition, the undersigned understands that FTA may suspend or debar a manufacturer under the procedures in 49 CFR Part 29.

SIGNATURE \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

DATE: \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Notary Public \_\_\_\_\_

My Appointment Expires: \_\_\_\_\_